Trade Castles and Forts of West Africa


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## Trade Castles and Forts of West Africa

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<td>Description</td>
<td>A.W. Lawrence uses an archaeological perspective to mark the changes underwent by European trade forts and the European and African communities that lived within them from 1482, the completion of Elmina Castle, to 'colonial rule'. Although 32 of the 43 edifices of Afro-European cultural encounters covered in this book are located along the shores of Ghana, Lawrence also examines trade forts from Mauretania to Benin including Arguin, Goree Island, Bunce Island, Assinie, and Whydah. The 495 pages contain about 40 drawings, 70 pictures, and 45 building plans.</td>
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PREFACE

THIS book gives an archaeologist's sidelight on history. Its theme is a manner of life (in professional jargon, a 'culture') as shown primarily in material remains of a period and peoples outside the normal scope of archaeology. There is, of course, much documentary evidence upon the early European traders in West Africa, and I have used it extensively more than I should have done if the historians had written fully on the subject. I am only indirectly concerned with the history, political or economic, of European endeavour, or of the Africans; those topics form the frame, not the picture, and are so treated. My purpose is to trace the changes in each trading community so far as they are, or used to be, visible in the buildings - fortified enclosures, within which a group of Europeans and Africans
lived, worked and (often prematurely) died, between 1482 and the beginning of colonial rule.

The original motive for the book, which is published with the aid of the Ghana Museum and Monuments Board, was to record the knowledge I obtained as Honorary Secretary to the Board and to its predecessor, the Gold Coast Monuments and Relics Commission; in the course of six years, I had directed the repair or restoration of eleven historic monuments, as well as the detailed survey of four others which had become too ruined to be worth repair. The policy of conservation, by an organization created for the purpose, had been recommended in October 1951 by the late B. H. St J. O'Neil, Chief Inspector of Ancient Monuments, Great Britain, and was implemented under the Chairmanship of Sir Leslie M'Carty. As a result, the most remarkable relics of Africa's past contact with Europe recovered their former dignity; for all but one of the well-preserved forts in West Africa stand in Ghanaian territory. But, for the comparative study, into which the book has developed, those in the other countries have been taken into account.

O'Neil initiated the study of old plans and drawings, but unfortunately was obliged to submit his report before he had time to relate many of them to the buildings he had seen - on a three-weeks' tour accompanied by Prof. W J. Varley. The report (which has been issued only in cyclostyle) gave the first archaeological description of the remains, and is a work of brilliant observation, to which I am greatly indebted. But its tentative conclusions, as he himself anticipated, have been in some cases amplified, in others superseded, by subsequent prolonged investigation on the spot and by comparison with the historical evidence he had begun to collect.

Hundreds of views and plans, drawn from 1629 onwards, record features or entire buildings that have disappeared, and for the existing monuments enable a series of alterations and additions to be traced. Many of the old plans specify the use to which each room was put, and often the calibre of every gun. Books written by occupants, and by visitors of the time, describe the buildings, and convey a general impression of the organization, the trading methods, the conditions under which Europeans and Africans lived, and their mutual relations. Factual details on such matters abound in the contemporary documents, which, however, contribute far less than might be expected to architectural history. They frequently mention works of construction or reconstruction, noting the materials employed, but convey no idea of the design, or do so merely by implication; clear though some of these allusions may have been to contemporaries, the modern reader cannot thereby visualize the appearance of anything which has since disappeared, but may occasionally recognize (with some degree of probability) a feature that still exists, and so ascribe to it a precise date.

The buildings were constantly subjected to alterations, which can be traced only piecemeal and at whatever intervals old information happens to be available. To extract the story from such data involves intricate examination and argument, but
the frequent opportunities of crosschecking ensure that surprisingly few conclusions can be far wrong. In general, the time at which each part of the building received its final shape can be ascertained within fairly narrow limits. If documents as yet unstudied should prove relevant, exact dating may become feasible in more instances, but there is no likelihood that the chronological sequence in any particular building would be modified. The interdependence of the known fragmentary evidence almost rules out that possibility, or so, at least, experience suggests; my first draft of the Elmina section was written before consulting the less accessible sources, which eventually confirmed the sequence already apparent but gave some less vague datings within limits I had previously assumed.

The Portuguese archives, which suffered heavily in the Lisbon earthquake, retain comparatively few documents of a relevant period; several already published have contributed small items concerning the buildings, but nothing appears to be obtainable from any of the microfilms yet listed and described in the Boletim da Filmoteca Ultramarina.

PREFACE
Portugesa (I -17, 1954-61). The papers in the archives of Courland and of Brandenburg-Prussia have been adequately published, and give virtually no architectural information; the fragmentary Danish records have not been published but were utilized in books by three scholars, with the same result. The documents in London are not quite so scrappy; those relating to Gambia and Sierra Leone, and to working methods of the Royal African Company, had already been examined by historians, but my search through the manuscripts yielded a number of passages bearing on the forts themselves, though the interpretation is not always certain. The published diaries of two Governors form the sole remaining writings of the first Dutch Chartered Company, and in over a hundred thousand words they make only one explicit statement on a piece of construction, enabling me to fix the date of an existing chimney. The material of the second Dutch Company, 1675-1791, however, is still preserved at The Hague, in such abundance that two eminent historians, whom it particularly concerned, have expressed doubt 'whether any scholar will find the courage and strength to examine it' I must admit that I abandoned the thought of doing so when the Director of the State Archives kindly informed me that eighty manuscript volumes of diaries include only sparse data concerning buildings, and that the six volumes reporting the condition of forts apply to 1771-94, a period covered by detailed plans. Except, then, for the manuscripts preserved in London, I have relied entirely on published writings and upon plans and views, published or unpublished, of which I have endeavoured to consult all that still exist, whether hand-drawn or engraved. In the text, I refer to engravings by the date of the original drawing, if known; when that is not known, I have normally cited the date of the engraving, without repeating in every instance the obvious fact that the evidence may have already become obsolete by the year of issue. Dates are stated without correction of the old calendar; though in the case of those English records which counted the New
Year from March, I have made the necessary change whenever I could verify its accuracy. I have modernized the spelling and punctuation of English quotations, the translations of foreign sources are my own, except in Bosman's case. I have standardized the diverse methods of referring to dignitaries, reserving 'Governor' for the highest officer in the region, 'commander' for the officer in charge of a subordinate fort, and 'Chief' for an African who would be so described under present conditions.

It has not been feasible to terminate the sections of the book at any uniform date. My general principle has been to ignore, or else to deal as summarily as possible with, any matter later than the abolition of

PREFACE
the slave-trade, or say, 181o, when the obsolescence of the system with which I am concerned was demonstrated by a Dutch proposal to abandon all forts except the headquarters. London, A.W.L.
September 1962

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THE publication of this book has been made possible by the grant of a generous subsidy by the Ghana Museum and Monuments Board, and by its permission to reproduce photographs (taken on its behalf by Mrs Mary Varley, Mr Ralph Merrifield and myself) and plans drawn by Mr K. S. Bailey.

For other illustrations I am indebted to the Public Works Dept. at Accra (Figs ii, 13, 14), the State Archives at Copenhagen (P1. i ib), the Royal Library at Copenhagen (Fig. 45), the Commercial and Maritime Museum at Elsinore (P1s 4b, 45, 46), the General State Archives at the Hague (Figs 5, 6, 8-io, 16, 18, 19, 23, 24, 26, 27, 30, 38-42; P1s 8a, 9a, 57, 59b, 72b, 88b), Messrs Martinus Nijhoff of the Hague (P1s 8b, 9b), the Aircraft Operating Co. of Africa, Johannesburg (P1s 14-16, 38-39, 8o, 87b), and in London to the British Museum (P1. 7a and reproductions from engravings), Lord and Lady Harlech (P1. 6), the Public Record Office (Figs I, 3, 12, 21, 31, 34, 35, 43; and P1. 5), the Royal Commonwealth Society (for the loan of Romer's engravings, P1s 43, 44), Mr Michael Teague (P1. 65), and the United Africa Co. (for the loan of Smith's drawings, Figs 32, 33, and P1. 64); also to the Österreichischer Nationalbibliothek, Vienna (P1s 7b, io).

My special thanks are due to Mr Donald Bell-Scott, who re-drew the plans with meticulous care, on a system devised by himself, which improved on the original draughtsmen's conventions.

Investigation of the buildings was facilitated by countless people in Ghana. I received constant help from the first Inspector of Monuments, Mr Harry Peters, his successor, Mr W L. K. Obuobisa, and the Assistant Inspector, Mr G. L. Adinyira; the foremen and workmen, too, collaborated by keen observation of features they uncovered in the old structures. My staff in the National Museum took part in a number of expeditions, under Mr A. T. Hammond, without whose neverfailing helpfulness so much field-work could not have been accomplished. Civil servants, Chiefs and local officials gave every assistance; I must particularly
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To Dr J. D. Fage, of the School of Oriental and African Studies, I owe many historical references. Mr R. A. Skelton and Miss Helen Wallis of the British Museum, and Dr Henning Henningsen of the Commercial and Maritime Museum, Elsinore, gave a vast amount of assistance concerning old plans and drawings; Commander Teixeira da Mota kindly sent me a photograph of a chart in advance of publication. The United Africa Company allowed full use of both drawings and documents in their library, and I wish to thank Mr F J. Pedler for these arrangements. Dr Peter Kup gave me references to documents I might not otherwise have found. Mrs Jasmin Rose-Innes verified certain points after I had left Ghana; the late Mr Hugh Thomas, with his long memory of the country and his old photographs, supplied data upon the previous condition of buildings.

PART ONE
INTRODUCTORY

THE PLACE OF THE FORT SYSTEM IN HISTORY

Time and another, nine European countries, or their national Chartered Companies, kept fortified stations in West Africa, the motive being to protect and expand the trade of each country and to exclude competitors. The earliest building of which there are any remains was founded in 1482; it consisted of two fortified enclosures, one within the other, containing residential quarters, offices, storerooms for goods to be bought and sold or for provisioning the occupants, workshops for their own needs and for repairing ships, open spaces upon which the soldiers could muster and the artisans carry on their work. These requirements persisted, though modified in detail, when the latest fort was built in 1784, and even when it was rebuilt in 1847. Consequently the lay-out of the buildings always remained basically the same, though the architectural style changed with time and differed according to the taste of the various nations. The pattern set in 1482 was designed for a large castle, and most lesser forts were necessarily restricted to a single enclosure, but composed of the same elements and arranged in a similar manner (so far as the shape of the ground permitted).
European strongholds had existed in Moslem lands during and after the Crusades, and trade flourished under their protection, but none had been built solely with commercial intent, nor at such a distance as the castle which the Portuguese founded at Elmina in 1482. It is the earliest European building in the Tropics; Columbus had not yet sailed across the Atlantic nor Vasco da Gama into the Indian Ocean. When those discoveries began to be exploited, the prototype layout of 1482 had already proved efficacious, and was adopted wherever the foundation of a trading-post seemed likely to be profitable; the 'factories' of the rival East India Companies, and of the French and British Companies in North America, were built for comparable requirements and therefore on the same pattern.

The Portuguese forts belonged to the Crown, but almost all the other nations, and certainly all those who proved successful in Africa, operated through the intermediary of a Chartered Company. These organizations competed not only with each other but with European private traders, who settled on the Coast, alone or with a partner, relying upon local goodwill for security. The overhead expenses of a private trader were so small that he could undercut the prices of a fort, but he was essentially a retailer, for he owned little storage space; he could, however, deal in slaves on quite a large scale, acting as a middleman between his African neighbours and any ship that called. His low charges attracted sea-captains. On the other hand, he had none of a fort's capacity to repair damaged ships or replace their lost gear, and could seldom victual a slave-ship adequately or even supply enough citrus juice to prevent scurvy on the voyage. Whenever, therefore, a Government re-examined the question, the conclusion reached was that the national interest demanded the continuance of the Company and its forts, even at the cost of a higher subsidy than the national funds already provided. The Royal African Company received a grant of C10,000 a year, its successor C15,000; the Danish Company received 93,000 Kroner, a figure roughly proportionate to its smaller scope. The English forts, with their personnel, entailed an average expenditure of some C20,000.

In West Africa, as in Asia and America, the presence of the forts led ultimately to European domination of the entire region, but through different causes and at a later stage in history; even a hundred years ago it was virtually restricted to the administration of a few islands or almost equally segregated places, and to indirect control of other lands within sight of deep water. In all three continents forts had been built only on the coast or beside navigable rivers. Those limits could be transcended in India by taking over the administration of densely inhabited and still highly organized remnants of a decaying empire; or in America by white settlers, at first concentrated near the forts, and then expanding to cultivate the hunting-grounds of a very sparse semi-nomadic population. West Africa was, of course, notoriously too unhealthy for settlement, and the indigenous farmers already utilized (in their own manner) all the ground near the forts; the few largescale plantations which the Europeans established, necessarily at some distance, were soon abandoned, as the promoters died of one or other
tropical disease which the medical knowledge of the time was insufficient to prevent or alleviate, or because local warfare put a stop to maintenance, or the soil lost its fertility. For conquest there was little opportunity, and, till comparatively recently, no inducement. Far inland, African empires and confederacies of great extent had been formed and continued to be formed, but on or near the coast, between

THE PLACE OF THE FORT SYSTEM IN HISTORY

the Senegal and the Niger, the Europeans found merely tribal states, constituted by a single little town or by a town with dependent semi-autonomous towns, in possession of a few square miles, or at most of an area smaller than the average English county; each tended to be hostile to the next. This political fragmentation led to a corresponding dispersal of trading-posts. Each European country or its Company aimed at securing a monopoly of imports and exports, and could often obtain it within the narrow limits of some particular state by building a fort in return for contracting an alliance - whereupon the neighbouring states would invite rival Europeans to do the same.

In fact, tribesmen who permitted a fort to be built on their territory had grounds for hope that muskets and ammunition might be issued them for aggression of their own device, and could count, if attacked, upon finding refuge under the protection of the walls and cannon. As a rule, however, the tribe gradually became more or less subject to the fort; the alliance developed into a loose and undefined protectorate, the effectiveness of which varied according to the strength of the Company and the size and resources of the state. The commander of a large garrison could exact obedience from the inhabitants of an insignificant state, whereas a weak Company with a powerful ally was liable to be used as a cat's-paw in inter-tribal politics, to the point of getting drawn into war, not only against Africans but also against other Europeans.

Whether or not an inter-tribal war involved European participation, on one side or both, it invariably had the effect of disrupting trade. That occurred even if the fighting was restricted to inland peoples, owing to the stoppage of their own activities or to the interruption of traderoutes which led through their territory. Much as the Europeans deplored the nuisance, they could not, even if they had combined for the purpose, have imposed tranquillity upon the country at large, partly because many of the coastal states had allies also in the interior, but mainly because their own force was dissipated among a hundred stations. The enforced pacification of a limited area could be achieved only if practically every fort in that district belonged to the same nation. But more often the forts of different nations were intermingled, sometimes in almost regular alternation along the shore-line; then the discordant policies of the occupants (or of their local allies) weakened all alike, and greatly enhanced the risk of attack upon each garrison. On some parts of the Coast one nation or another did succeed, at a fairly early date, in eliminating a rival, forcibly or by purchase, but elsewhere the interspersed holdings endured well into the nineteenth century. In fact, some outlasted the system which had created them that of using forts for trade. One even outlasted the ensuing phase of
INTRODUCTORY
Colonial Empire; for sentiment's sake, Portugal retained the site of its old fort at Whydah (Ajuda), an acre of vegetable garden enclosed by French territory, but in 1961 the new Republic of Dahomey proclaimed that it would no longer tolerate imperialist possession.

The transition from the fort system to colonialism was extraordinarily slow and gradual. It started owing to decisions taken in Europe, by one Government after another, to assume direct responsibility for administering the forts, while leaving the Companies in charge of strictly commercial matters. Britain took this step thirty years later than Holland, in 1822, when the economic crisis caused by the abolition of the slave-trade had settled into a depression which seemed likely to continue indefinitely, so that complete withdrawal from the Coast had been advocated by informed mercantile opinion. Next there followed the suppression of the Companies, after an interval, in the case of Britain, of twenty-one years, during which security had so improved that in many localities trade might equally well be conducted unprotected by forts. Most of them had already been abandoned, and those under Danish and Dutch ownership were sold to Britain in 1850 and 1872 respectively; comparatively few were maintained for use as administrative centres or as garrisoned posts. That their fortifications might still be required was demonstrated by a number of attacks by townspeople; Keta fort was besieged in 1847 and again in 1878. Danger of invasion from the interior had long been enhanced by the dispersal of European weapons, which enabled ambitious states and individual adventurers to harry or subdue the tribes around them, and so to build up ever greater force. The European authorities could not adequately protect their own dependents from the succession of minor annoyances, raids, and attempts at conquest, until they brought adjacent inland regions into subjection, and could not prevent intertribal warfare without introducing a regular administration with military backing - whereupon the old forts, of course, became superfluous, except for any which might usefully be adapted to contemporary civil purposes. After each extension of colonial territory another set of frontier troubles was encountered, and could not be solved without further annexation, till eventually the whole of West Africa came under more or less effective administration - so recently that there are people still living who saw the first ceremonial hoisting of the Union Jack or the tricolour in their district, as well as its lowering for the last time.

It was along the Gold Coast that the forts had been concentrated most densely, and it is not fortuitous that this was the first native African territory to become an independent State on a modern pattern; there only, generations of literate Africans had learnt to hold their own

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in the white man's world. Moreover, the political crisis which immediately arose in the Dominion of Ghana (and has since given occasion for the Republic's peculiar administrative features) grew out of a cultural division between the coastal area, where Europeans had worked among and with Africans for nearly
five hundred years, and the interior, where there had been little more than half a century of such intensive contact.

In all history there is nothing comparable with the effects produced by the forts of West Africa; nowhere else have small and transitory communities of traders so changed the life of the alien peoples who surrounded them and indirectly of a vast region beyond. The causes that originated this transformation, and the manner in which it began, will appear in the following chapters of generalities, and are exemplified through innumerable scattered passages in contexts descriptive of individual buildings.

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To ships under sail, the Atlantic coast of the Sahara is obstructed by winds and currents, and the Portuguese discovery of a route to and from West Africa was made solely through the persistence of Henry the Navigator. The initial difficulties were first overcome in 1443, when one of his ships reached Arguin, on the southern fringe of the desert, fourteen hundred miles from Portugal. Two years later the first trading-house was built there, on a barren island off-shore. At the same time another Portuguese captain sailed onwards to the green country of West Africa, where, instead of a few nomads, a settled population of farmers was encountered. They wore cotton garments dyed with indigo, a plant then in demand in Europe, and some possessed ornaments of gold or ivory; these and other products of the interior were brought down great rivers, which the Portuguese discovered, one after another. The people readily exchanged whatever they had for European goods. A small number of slaves was bought and shipped to Portugal, initiating a trade which persisted at the rate of several hundreds a year; the possession of slaves added distinction to rich households, and when the racial addiction to music was recognized, African bands were formed.

In 1462, when the Portuguese had charted the mouths of the Senegal and Gambia, they passed the highlands of Sierra Leone. Some years later they proceeded southwards, finding backward tribes on a lowlying shore (in present-day Liberia); seamen soon named it the Grain Coast, from the abundance of the peppery 'Guinea grains' or 'grains of paradise' (Afromomium melegueta), which at first sold well in Europe, but ceased to be worth shipping when the opening of a sea-route to the East Indies reduced the price of real pepper to a competitive level. The remainder of the West Africa shore-line trends eastward, beginning with the Ivory Coast, an even less inviting series of swamps and lagoons, for the difficulties of which the cheapness of the one valuable commodity never compensated. But when, in 1470, the Portuguese again sailed onward, they met firm ground with a succession of headlands and bays that provided sheltered anchorage, invariably opposite

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a town or village of fishermen and cultivators. Here, too, ivory could be bought, and gold ornaments were being worn in a profusion astonishing to European eyes - for at that time all Europe suffered from a scarcity of gold; in fact, a general
expansion of business could not really gather momentum till the influx of precious metals from America in the following century. The Portuguese named this country The Mine; in the seventeenth century it became known as the Gold Coast (and is now Ghana). Actually the quantity of gold seen in 1470 gave a rather misleading impression, for a stock must have accumulated during many generations. Beads of gold (and of tin) are known to have been made before the time of Christ in Nigeria, which is not remarkably auriferous, and the search for the metal is likely to have been pursued as long as two thousand years before the arrival of the Portuguese. Meanwhile, opportunities for export can only have been negligible; some loss, no doubt, had resulted from the burial of ornaments with their dead owners, but even that may have been partially recovered as old graves became exposed by erosion or in agricultural work. That the majority of gold available for sale was in the form of ornaments is clear from Portuguese records; in 1502 a single ship carried 125 lb. weight of them, and at least twelve times that amount went to Portugal every year. The method of obtaining new supplies varied according to distance from the sea; the people who lived on the coast, or within a few days' journey from it, could only wash gold from the rivers, apart from finding an occasional nugget, whereas in the interior miners followed veins in the rock, digging long galleries, sometimes one above the other, with occasional vertical shafts for access and to remove the excavated material.

The Portuguese found the people eager to exchange gold for European products, some of which the natural resources of the country did not provide. The only metal present in appreciable quantities, apart from gold, was iron, obtained by smelting the hard concretions which are embedded in laterite soil; the smiths made it into implements and weapons of good quality, but the amount barely met essential needs. Cotton could not be grown, and the native sheep and goats were short-haired, so that materials for clothing were limited to hides and bark-cloth; all ornaments were made of gold or ivory or coloured stone. Consequently the Portuguese found they could send shipload after shipload of brass pots and basins, monstrous bracelets of solid brass or copper to be melted down and re-cast according to local requirements, new or second-hand cloth (at first largely from North Africa, subsequently from India), hatchets and knives, beads and wine and many other novelties. The demand, in fact, was insatiable, because it spread far from the landing-places where the actual exchange took place. Trade between the coastal and inland peoples had been maintained even at the period when both relied on stone implements; now the itinerant merchants also took imports to the interior, in return for gold, and, to a lesser extent, ivory. These journeys, of however long duration, were necessarily made on foot; horses and donkeys died if they passed through the tsetse-fly belt of forested hills behind the coast (where, therefore, none had yet been bred). All loads were carried balanced on porters’ heads. Although a trader might arrive from the interior with no other baggage than a box of gold and perhaps a tusk or two, he would return with many head-loads of cloth and of the heavy brass bracelets (which, in 1557, the Europeans sold at the
rate of eighty to an ounce of gold). The extra carriers he would require could seldom be hired to make a journey of several weeks, and often he was obliged to buy slaves instead - necessarily from the Portuguese. For, although slavery and a sort of indented labour (scarcely distinguishable in practice) were African institutions of long standing, they were confined to a small minority of the population, who kept no surplus hands above the number that could be put to work in the fields or households. (As a French traveller learnt in 1667, the slaves, or bondsmen, were 'usually poor wretches who have not the ability to make a livelihood, and sell themselves, in order to live, to rich traders of the country, all of whom are noble'.) The Portuguese, however, could buy slaves from other parts of Africa and, for more than half a century, any they imported 'were bartered very profitably at The Mine, for the gold-merchants gave twice the value obtainable for them in the Kingdom [of Portugal]'. As late as 1518 a Portuguese on the Gold Coast wrote to Arguin asking for the delivery of forty or fifty slaves, preferably all male and the best youths available - obviously expecting to sell most of them for carriers. Shortly afterwards the situation changed because, as a pilot of 1535-50 reported, 'great caravans of Negroes' began to arrive at any place in Africa frequented by the Portuguese, 'bringing gold and slaves for sale. Some of the slaves have been captured in battle, others are sent by their parents, who think they are doing their children the best service in the world by sending them to be sold in this way to other lands where is an abundance of provisions.' Incredible as the idea may seem, considering the ease with which life may now be maintained in almost every part of West Africa, there is good reason to think that at the time of the Portuguese discovery the inhabitants of most areas rarely had enough to eat, unless they were fishermen or lived near enough to the coast to buy smoked fish. The main cereal crop was guinea corn (also called sorghum or durra) which does not tolerate either very damp or very dry places, and therefore could not grow in a large proportion of the region; there, millets and a kind of rice (Oryza glaberrima) were cultivated to some extent. Any failure of the staple crop must have brought the population to, at least, the verge of starvation. A pulse, the Bambara ground-pea, may perhaps have been grown as a subsidiary in the fairly dry region of the Senegal and Gambia. It is highly questionable whether any edible banana had been produced. Yams of inferior varieties are indigenous, but the earliest evidence for their cultivation is more than fifty years later than the arrival of the Portuguese; at any rate they must have been collected over a wide range of territory. Wild forms of spinach were eaten, and 'garden eggs' (Solanum) must have been cultivated. Palm-oil enriched the diet of the moister areas, and there palm-wine was drunk, while in drier areas a kind of beer was brewed. Scarcely any animal fats were obtainable outside the drier regions, where alone large cattle could live - infection by tsetse fly caused their death within weeks of entering a forest. Game must, of course, have been plentiful and have formed the main source of protein wherever fish was unobtainable. No doubt, too, a greater
variety of wild plants had been found edible, though their usefulness has since been forgotten; they have become redundant. The old-established crops, too, have very largely been superseded by plants which were introduced by sea from tropical Asia and America, primarily for the benefit of the forts. The first Portuguese trading-post, on the Saharan island of Arguin, never became important; the second, Elmina Castle, on the Gold Coast, remained to the end the largest in Africa, and its foundation in 1482 really initiated the system of commercial forts. The King of Portugal gave orders for the building against the advice of his counsellors, who stressed how precarious would be the situation of the garrison, isolated in a remote and dangerous land. But no other expedient would have served his purpose. Theoretically he owned the sole right to trade along the coastline explored by order of his predecessors, but a situation had developed which threatened to leave Portugal only a negligible share of this commerce. Rumours of the enormous profits that could be obtained had soon lured ships of other European nations to compete with the Portuguese, in spite of manifold deterrents. The Portuguese reserved all charts for their own use, so that their rivals faced greater natural dangers, as well as the possibility of interception. Legally such intruders were no better than pirates, and every attempt was made to sink or, preferably, to capture them; in the latter case the Portuguese confiscated the vessel and everything on board, and were entitled to hang the crews (though in the known

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instances they received lenient treatment). As early as 1479, the Portuguese seized both a French and a Spanish fleet at The Mine, but only through chance encounters in superior strength; no doubt many other intruders escaped notice or could not be overpowered. King John II solved the problem by constructing the Castle of The Mine, the present Elmina Castle. It enabled Portugal to keep both a military and a naval force permanently stationed in Africa, precisely where the abundance of gold and the densest population offered the highest profits, and where, in consequence, ships -of other nations came in the greatest numbers. Their arrival at any place in the vicinity of Elmina must, of course, have quickly become known from local informants, with the result that the Portuguese could almost eliminate competition on that part of the coastline. Other benefits followed. The internal trade of the country became re-orientated upon the castle and ensured a constant exchange of goods, for which capacious storerooms were provided. A ship no longer had to lie off-shore for weeks or months while African traders came (sometimes from far away) and bartered piecemeal; instead, the goods she had brought were promptly discharged into the castle, and the cargo for the return voyage was loaded from the storerooms. This speedier turn-round of shipping not only reduced costs, but also lessened the incidence of disease among the crews, of whom a large proportion almost invariably became incapacitated from fever or died during a long stay; English off-shore traders in 1553 even lost a hundred men out of a total complement of one hundred and forty, and abandoned two of their ships for lack of sailors. Among the Portuguese garrison the rates of sickness and mortality
should have been comparatively low, because the castle itself is free from the mosquitoes which carry malaria and yellow fever; other diseases, however, must always have reduced the effective strength, and every now and then an epidemic caused many deaths. Still, the loss of soldiers, or even mercantile officers, mattered far less than the waste of ships’ time and the depletion of crews, especially when African employees and slaves had been trained at the castle to perform various types of essential work. Furthermore, the amount of work diminished as retail trade was gradually abandoned to the townspeople. Contractors among them also supplied food and timber, both for the regular inhabitants of the castle and for the ships that called there - often in need of repairs or replacement of gear lost at sea, for which the castle stores and its slave-artisans provided. Ships could send their boats, too, to draw upon the castle reservoir; a simple but ingenious device piped the water directly to their barrels. All these facilities, moreover, were obtainable in perfect safety, under the protection of the garrison and

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their cannon. Arguin, too, may have been fairly safe (though lacking in facilities), but nowhere else in Africa could a ship lie secure from attack, whether by other European vessels or by the local population. The immediate success of Elmina encouraged the King of Portugal to build a lesser fort in Sierra Leone, but he abandoned it within a few years, and a mission he sent into the Sahara, to Wadan, reported unfavourably upon a project to maintain a post there. A trading-station in Nigeria, at Gwato, was likewise abandoned. Apart from the equatorial islands of Silo Tome and Principe, which can scarcely be reckoned as belonging to West Africa, the permanent bases continued to be restricted to Arguin Island and to The Mine, where other tradinghouses were opened; one at Axim, seventy miles west of Elmina, was converted, soon after 1500, into a small fort, presumably in order to help exclude foreign ships from the gold-markets. The Portuguese, by this time, had explored all the coasts of Africa and discovered the route to India, while they were also investigating the natural resources of Brazil - they did not begin to colonize it till 1530. When they realized the illimitable opportunities presented to them in the Indian Ocean and the China Seas, their interest in West Africa flagged. The number of Portuguese residents in Elmina soon dropped to '25 or 30', and eventually was kept up only by transporting criminals to serve as soldiers. The numerical reduction actually had less effect than the decay of morale, because the local tribesmen fought for the Portuguese when called upon, while the mulattoes, descended from former members of the garrison, probably supplied enough recruits to fill vacant posts in the castle. In April 1557 the Governor of Elmina wrote twice, asking that the King of Portugal should send a fleet every year for protection against foreign ships, who 'glutted the whole coast with many goods of all kinds', taking half of the available gold in return. Their success was due to 'the low prices which they offer' compared with the Portuguese, who had taken the utmost advantage of their
monopoly, and in any case had to pay more for the brass and cloth, which they bartered in exchange for gold, than did their rivals, the English and the French. Two large foreign ships had recently been sunk by a Portuguese seacaptain, whereas the Governor himself seems to have been singularly unable or unwilling to take any action on land. In two successive years English ships lay for weeks, trading to vast profit, at Shama, barely twenty miles from Elmina towards Axim, and only when they came for a third time, in 1558, did the Portuguese succeed in expelling them, after some delay. The immediate construction of a little fort at Shama may have put a stop to intrusion thereabouts, while a short-lived fort

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at Accra, destroyed by tribesmen in 1576, may have caused some impediment on the other side of Elmina. But English and French ships continued to frequent other parts of West Africa; occasionally their governments responded to the incessant Portuguese demands and prohibited such voyages, but rarely enforced measures against them. To some extent, however, the growing attractions of America deflected interest from Africa.

Meanwhile, the transatlantic slave-trade had developed, to supply labour for the Portuguese settlement of Brazil and the Spanish exploitation of the Caribbean; the traffic increased at a prodigious rate in the latter part of the century, and continued to increase after 1600, as more land in America was brought under cultivation. Some of the slaves came from West Africa, others from the Congo and Angola, where the Portuguese now had more important bases and wider influence. Most of their attention and efforts, however, were directed to their vast commitments in Asia, whence, it was said, only one man out of ten returned; the drain upon their scanty man-power would alone have prevented expansion or even vigorous maintenance of their West African holdings. The situation of Portugal deteriorated, too, when from 1580 to 1604 the Crown was united with that of Spain, which most definitely formed the senior partner in the confederation; under neglectful rulers the exhaustion and decay of Portugal became manifest throughout the world. Separation brought some relief, but at the cost of losing the protection of Spain, and so gave other nations opportunity to seize piece after piece of the enormous empire. In all West Africa Portugal now retained only three strongholds on the Gold Coast; the Spaniards had taken over Arguin at the union. The Dutch began in 1596 with a vain attempt to capture Elmina Castle; in 1612 they built a fort only a dozen miles away, at Mouri, and held it owing to the enthusiastic assistance of the local people, who benefited from this unique market for goods at undercut prices. On the other hand, the Portuguese on the spot retained enough enterprise to open a gold-mine near Axim, and enough strength, in conjunction with their African dependents, to rout another attack on Elmina. The third, in 1637, succeeded. Five years later, the Portuguese retained no foothold in West Africa outside Guinea, where they had just fortified Cacheu; their island base of Sio Tome had also been taken by the Dutch. The Dutch needed Elmina in order to keep up the supply of slaves to Brazil, which they had invaded in 1624; they now had forced the Portuguese troops out
of many of the settlements, and to all appearances had an excellent chance of
conquering the remainder if only they could 36

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expand the Brazilian economy. That they failed was partly due to their seizure of
the Gold Coast rather than Angola, from which they could have obtained slaves
more suitable for work on plantations. However, as the trade with Angola
continued to be a Portuguese monopoly, and the Dutch could not secure a like
position for themselves in West Africa, other nations soon established forts and
lesser posts there. Many of these ventures were ill-judged, with the result that the
buildings were abandoned, or changed owners quickly; one country, Sweden,
withdrew altogether after an ambitious start, ordered by Queen Christina. It is
significant that the successful newcomers, England, France and Denmark,
resembled Holland in having American possessions as well; the fact that they
equally competed with Holland in the Indian Ocean is much less relevant. Since
the governments of that period could not conduct commercial enterprises, all four
countries operated through groups of merchants, to whom they granted the
exclusive right to trade, and in the case of the Dutch and Danish Companies, the
Charter applied to possessions in the West Indies and in West Africa jointly.
Similarly, when the Duke of Courland (Latvia) decided to colonize Tobago, the
Company he formed also maintained a fort in the Gambia. Actually, the
prevailing winds and currents did not allow of a straight passage from West
Africa to Europe, and ships’ masters preferred to return by crossing the Atlantic to
tropical America, and then sailing north till they met the westerly winds of
temperate latitudes. The homeward voyage normally lasted several months
(compared with one or two when outward bound), but the time expended could be
turned to profit by carrying slaves to the Americas, where a cargo of produce
could be picked up for the second lap of the journey. In contrast, the natural route
for the East India Companies of the various nations avoided West Africa in either
direction. But occasionally their ships called at a fort, if in need of repairs or
supplies - especially fruit or green vegetables to cure the scurvy, which no crew
could then escape after spending a long time continuously at sea. At some forts,
therefore, only homeward-bound ships were allowed to buy fruit; on the outward
voyage it was an unnecessary luxury, but citrus juice might be obtained in barrels.
In native fruits and green vegetables West Africa was even more deficient than in
cereals or root crops, but every fort maintained a large garden in which to grow
European salad plants, cabbages and cauliflowers from imported seed, and fruit
trees introduced mainly from tropical Asia and America. Most of these
introductions can be traced to the Portuguese (though some appear to have been
made later, chiefly by the Dutch). Among the earliest of the new plants were the
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lemon, the sugar-cane and melons, which could be obtained in the Mediterranean;
probably they came indirectly, through the Portuguese colonies on Madeira and
the equatorial islands of S o Tome and Principe, none of which had been
previously inhabited, so that every effort was made to stock them. Soon after the
first voyages to India and Brazil, seeds and plants from there were brought to these islands, and again they in turn seem to have supplied Elmina and Axim. The orange, tamarind, banana and coconut, all of which were derived from the Indian Ocean, and the pineapple, pawpaw (papaya) and guava from the Americas, must have been naturalized in the gardens of the forts, and then been adopted by the neighbouring Africans, till eventually they were spread far and wide. That the general dissemination did not proceed very quickly may be inferred from the fact that in 1692 a coconut grove near Accra formed a landmark to seamen, who called it 'the Spanish cavalry'; palms seem to have been rare on other parts of the coastline, which now are fringed with them. (It is perhaps worth adding that the mango, avocado, and other fruits which have become quite common, seem to have been unknown till last century.)

Subsistence crops, too, were introduced. The sweet potato, of American origin, and the Asiatic yam must have been among the earliest plants brought in by the Portuguese, and the cultivation of the native yams may have started in imitation; at any rate, the methods used are the same as in India. Maize (though some excavators claim to have found evidence that it already grew in Africa) is likely to have been introduced from America soon after; the evidence is confusing, because in general the old writers fail to distinguish clearly between maize and guinea corn (sorghum), both of which the Europeans called 'millet' (unfortunately always in the singular; the South African plural form, 'mealies', is a later improvement). Apparently maize did not quickly become a popular food; as late as 1784, the Fantis grew it only for sale to Europeans or to Africans living near the forts. In contrast, the ground-nut or pea-nut, which is undoubtedly of American origin, soon became widespread; so, probably, did one of the coco-yams, the taro of Polynesia. The present staple food, cassava or manioc (in Europe used in the form of tapioca), was introduced from Brazil, apparently to Angola, about 1600, and not disseminated throughout West Africa till nearly two centuries later. Asiatic rice, though preferable to the indigenous, could be grown in too few localities accessible to Europeans, and so attained no importance. The prickly pear or Indian fig (actually of American origin) rarely fruits in West Africa, but was often used to make an impenetrable hedge around a fort or village, as also were two other American plants, sisal and aloe. Another American plant, tobacco,

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must at first have been restricted to the comparatively small coastal areas with a suitable climate, but its expansion inland seems to have been rapid. One of the cogent motives for growing new crops and anti-scorbutic fruits was to provision the slave-ships for the Atlantic crossing. The demand for slaves steadily increased, in both the American continents and in the West Indies, so long as great expanses of undeveloped land gave scope for the creation of new plantations, and it did not abate till shortly before the legal abolition of the trade - which then continued on a lesser scale from anchorages not under European control, and was finally suppressed barely a hundred years ago. If the earlier period be included, when the ships went no farther than the islands in the eastern Atlantic, the trade persisted four and a half centuries, during which a total of
between twenty and thirty million slaves may have been carried, or at least embarked. Losses at sea amounted to some millions; even so, they were roughly proportionate to the mortality in the ships' companies. Danish records for twelve successive years show that fifteen per cent of the slaves died on the way to America, compared with thirty-five per cent of the officers and seamen in the course of the round voyage - yet the living conditions on Danish ships were better than on Dutch or English ships at that period (1777-90). The slaves were all bought by the Europeans at ports, to which African merchants brought them individually or in convoys. As time went on, slaves must have been drawn from far inland as well as from near the seaboard, and even at quite an early date the flow can scarcely have been maintained by the old-established method, disposal of debtors or criminals or indigent persons. Tribes may sometimes have gone to war for no other reason than to acquire prisoners they could sell, and if they had other motives they turned their victory to extra profit by that means. Frequently they used the proceeds to facilitate new aggression by buying guns and powder from the Europeans; this traffic, which the Pope had forbidden to the Portuguese, was banned by their successors for a while, but then one Company after another fell to the temptation. If they had not done so, it is questionable whether the empires of the Akwamu and Ashanti could have expanded so fast; that may also be true of Dahomey (which took the unparalleled step of prohibiting the export of slaves for a while, perhaps as an easy way of restricting the sale of arms in the newly conquered coastal region). Each of these powers owned cannon as well as small-arms, thereby greatly enhancing the terror, if not the efficiency, of their armies. The rulers of all three states were constantly wooed by rival European nations, but Ashanti alone became entangled with their politics.

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The empire of Dahomey inherited, with the annexation in 1727 of a coastal state, an almost unique system of free trade; the port, Whydah, was open to ships of any flag, and the forts of three European nations stood in close proximity (enclosed by walls which, by a later ordinance, might not exceed three feet in height). Nearly every fort elsewhere in West Africa theoretically held a monopoly within the territory of some tribe or sub-tribe; ships of other nations, however, were often allowed to trade, upon payment of dues or merely for the convenience of the occupants, who now were obliged to stock a much wider range of imports than in early times, and frequently ran short in one or other line of goods. An English list, published in 1665, of 'the merchandise, wares and commodities most desired', enumerates, in perhaps significant order: old hats and caps, 'cats to catch their mice', salt, swords, daggers and knives, mantles and gowns and other clothes, red caps, axe-heads and hammers, short pieces of iron, belts, sheepskin gloves, leather bags, brass or iron bracelets, metal basins and jugs, also 'coarse tin pots, beads, corals, coarse red cloth, linen and kersey [a coarse woollen cloth], layers and great Dutch kettles with handles, graved brazen vessels, horse-tails, great pins, patched sheets and coarse French coverings, slight Flanders [brass] caskets and chests of Rouen [leather] of a low price' A French or Portuguese author would have substituted other kinds of cloth and added brandy and wine. Subsequently, rum
and tobacco became important, while the English in particular brought out vast numbers of clay pipes and of gun-flints.

An officer of the Danish Company, who went to Africa in 1692, has listed the kinds of goods then obtained in exchange: gold, ambergris (mostly from the Gambia), civet, ivory, and hippopotamus tusks, 'box' (camwood for dye), rice, 'grains of paradise' (Malagueta pepper), hides of buffalo and antelope, mahogany, reed and straw mats, salt (in small quantity from Accra), and, of course, slaves: he should, too, have mentioned indigo. He also advocated buying two African products which could be profitably sold on the Gold Coast: the aggrey beads of parti-coloured stone ('coral') from the Cameroons, and the cotton garments made in both the northern region and in the extreme east of West Africa. Perhaps in the hope of cutting out these imports from areas with which they had little or no contact, the Dutch maintained cotton plantations near both Axim and Shama in 1765-83. The only previous enterprise of that description seems to have been the sugar plantation laid out in 1708-9, a few miles inland from Butre, but no data upon it are known; the Dutch made rum there.

Of all the nationalities represented after 1637, when the Portuguese left Elmina, the Dutch operated on the grandest scale. In the following half-century, their fleets struggled for dominance along the entire coastline, and temporarily obtained possessions ranging from Arguin, which they captured from the Spaniards in 1638, to the equatorial island of Sio Tome. But in 1678 they lost the extreme north to the French, who demilitarized Arguin, since they could not spare a garrison large enough to defend it, but rebuilt the two forts the Dutch had placed on another island, Gor'e, off Dakar. Using the whole island (nearly half a mile long) as a base, the French Company explored the river Senegal, securing the delta by a great mud fort on the islet of St Louis (1638) and the upper waters by Fort St Joseph (1700); they were, however, twice ejected from the whole region by the English fleets. The other river of interest to Europeans, the Gambia, was also controlled by an islet, fortified in 1651 by the Baltic Germans of Courland; the Dutch arranged to buy them out, but were frustrated. After 1661, when an English fleet seized the island, the river was usually dominated by the English; the French repeatedly captured the island but left each time after devastating it, their power being too limited to allow them to retain possession. Eventually, however, the numerous lesser posts that were scattered along the river banks included two of somewhat intermittent French occupation, quite near the fort; the earlier, at Albreda, began in 1681 with a single hut.

The nearest forts to the south were Portuguese, at Cacheu (founded 1587-8 and strongly fortified in 164) and Bissau (1766), in a swampy archipelago of meagre commercial attractions. Sierra Leone offered only slightly more profit, and the English prevailed there with negligible effort, suffering many vicissitudes. Their weak fort of 1672 on Bunce Island, in the estuary, was taken and wrecked by the French in 1704 and by Africans in 1728; it remained thereafter in poor condition, although the only stronghold (till a century later, when a little, purely military, fort was built at Freetown). An English establishment at Sherbro, south of the
Sierra Leone range, consisted merely of a stone house inside an earthwork, and was ruinous by 1726. An almost indefensible post at Cape Mount, where the Grain Coast began, was among the earliest Dutch ventures in Africa; otherwise Sherbro formed the last in the northern chain of European stations, which began at Arguin, a thousand miles away.

No forts ever stood within seven hundred miles of Sherbro to the south and east. Traders may have resided temporarily on shore, but no permanent station is recorded upon the entire length of the Grain Coast (Liberia) and almost all the Ivory Coast; near its eastern extremity, two periods of French occupation involved the construction of merely wooden buildings and a palisade, on both occasions at Assinie.

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But in the next three hundred miles of Gold Coast (Ghana), roughly a hundred trading-posts (castles, forts and lesser posts) existed at one time or another, and most of them contemporaneously. Beyond, on the Slave Coast, was the isolated group at Whydah; thence a succession of lagoons and swamps, without a single permanent European station, continued along the remainder of West Africa. While the Dutch still hoped to dominate all West Africa and therefore turned their efforts towards the northern forts, their position on the Gold Coast deteriorated. The process began even before they completed the expulsion of the Portuguese, and was signalized by the construction of an English fort. This belonged to a partnership of merchants. But in 1662 the Crown formed a grandiose Chartered Company to take over and expand their holdings, rejecting the Dutch claim to a monopoly of trade. If any such right had been obtained (by conquest from the Portuguese), it had clearly lapsed; perhaps a dozen forts, large and small, Swedish and Danish as well as English, already existed, some within sight of those belonging to the Dutch Company. A few years later, when England and Holland were at war, each in turn sent out a naval expedition, to which any fort of mere average strength surrendered after little or no resistance; the peace treaty, however, restored almost all to the previous owners. The Dutch Company remained always the most important, and proceeded gradually to build a greater number of new forts than its competitors could undertake. Its superior resources became still more evident after withdrawal from the northern coast; as a rule, the Dutch forts were larger, more strongly manned, better maintained and better stocked than any others. A French trader in 1679 ignored a signal inviting his ship to anchor off one of the forts, 'since one can deal only in trifles with the Dutch, who are always supplied with the more essential things'.

Only the Brandenburg Company spent more lavishly, though in a very small area, when it forced its way into the scene half a century later. So long as enthusiastic royal support was forthcoming, both the military strength and the commercial activity were disproportionate to the limited scope; with a new fort at Arguin as an intermediate calling-place, no less than 95 ships traded with the headquarters at Princestown in two years (between the Christmas of 1711 and that of 1713). But Brandenburg sold out to the Dutch after thirty-eight years. A brief Portuguese occupation of Christiansborg had already ended, and apart from occasional
French endeavours to gain a foothold, the Gold Coast remained divided between the Dutch and English, whose holdings were intermingled, and the Danes, who concentrated on the eastern part and made it virtually their own preserve. The English, in contrast,

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lived in perpetual difficulties; they could rarely afford to maintain their forts properly, had too few men and were poorly supplied with goods, because the government subsidy, without which they could not have operated, never reached a really adequate figure. Their inferiority to the Dutch was often so apparent that African customers preferred not to trade with them. The English were also peculiarly vulnerable to intrigue; they ascribed tribal onslaughts upon two of their forts to Dutch instigation, but apparently never contrived a similar action against a Dutch fort (though the archives at The Hague may yet reveal otherwise).

Every Company maintained an army against such eventualities the Dutch of two hundred men, the English of, at most, one hundred; the Danes, since their holdings were concentrated, needed even fewer. But a convention prevailed that the various Companies should not openly attack each other unless their home countries were at war. An occasion when the English and Dutch combined to capture a Brandenburg fort does not form a genuine exception since they acted in retaliation, after being themselves attacked by an African ally of the Brandenburgers, whose 'nest of rogues' (as the English Governor called it) was then without a Governor (or, it would seem, any substitute). On the other hand, there are two notable cases of a local truce while the European countries themselves were at war. In 1796, when Napoleon took over Holland, the Dutch on the Gold Coast vied with one another in professing loyalty to the House of Orange, and the British Governor entered into an agreement which prohibited aggression. The same result was tacitly achieved in 1807, when Denmark joined Napoleon. Four years later, a report to London justified the policy on the argument that the Danish Governor maintained a plantation and 'it might be desirable not to molest him in the prosecution of a work which may, by the force of example, turn greatly to the benefit of Africa. It was commenced about three years past, and coffee is already brought to great perfection.' This was the plantation at Kpomkpo, the earliest of several which the Danes successfully established but could not long maintain. Their first attempt, in 1788, is peculiarly interesting, because it was promoted in the hope that the slave-trade might be eliminated, or at least reduced, by production on African instead of American soil. The director, Isert, had served his Company without apparently feeling any repugnance to slavery, but the ship on which he returned to Denmark called at the West Indies, where he was horrified by the treatment of the plantation slaves. He spoke and wrote vehemently on the subject and obtained government funds to set up demonstration plantations in Africa, while distributing similar plants to the local people. But Isert,

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and his wife and child, died soon after the first seedlings had been put in, and the scheme then lapsed. The English had never been allowed to grow more produce than could be consumed locally or sold to ships, in case they should compete with African enterprise, but began in 1808 to import seeds and issue them with printed instructions for distribution through the forts and prominent chiefs. Sir Joseph Banks, moreover, had a botanical garden established in Sierra Leone to experiment (in conjunction with Kew Gardens) on acclimatizing imported plants. Attempts to foster coastal agricultural production formed a most ineffectual palliative to the economic collapse, which started when the slave-trade declined (as a result of natural increase in America) and reached a climax after its abolition by Denmark in 1803, by Britain in 1807, and subsequently by other European countries. The Africans on the Coast, and many in the interior, had flourished on the trade and were now ruined. The Companies had long operated at a loss, which now became crippling; the system of forts, therefore, was gradually replaced by one whereby the European governments assumed direct control, leaving nothing but commerce in the hands of the traders. One administrator of the new type, Brodie Cruikshank, published in 1853 a tedious book, in which he describes the deplorable impression he received from reading documents of the previous system. The European Companies, he asserts, had done no good to Africa - in contrast, naturally, to altruistic civil servants like himself. Those documents (or a fair proportion of them) are still preserved, and taken as a whole they do not justify his verdict: some episodes deserve condemnation, others praise, and while a few officers are shown to have behaved irresponsibly, or (as in instances he quotes) abominably, others did their best for the Africans under their protection and command. The mere fact that they dealt in human beings now condemns them, but moral indignation was only slowly being aroused among enlightened Europeans, and to the very end the Abolitionists met with strong opposition. A naval surgeon, John Atkins, who made a voyage to the Coast in 1722, was far in advance of his time in his conviction that the trade itself was evil, a disgrace to Europeans and Africans alike, yet even he, writing propaganda, finds no fault with the conduct of the officers. That a man like Isert, within twenty years of Abolition, could serve his Company without apparent qualms, till he saw how slaves were treated on the West Indian plantations, is understandable, for the full horror of the trade could not be realized on the Coast. Obviously, the moral purpose of administration changed when the framing of policy in Europe passed from the directors of a business concern to government officials, and the executives on the spot were

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no longer traders. But the basic practical needs of maintaining order and prosperity in each locality had been equally apparent to the Companies, as a matter of self-interest, and were met by their Councils, composed of officers familiar with the places and people. Their effectiveness was limited, of course, to small areas, separated by country in which they had little or no influence, whereas the administrators for the European governments exercised authority ever more widely.
Africans, on occasions when they recognized a Company's good intentions, gave their confidence unreservedly. In 1789, when an epidemic of smallpox broke out among the Cape Coast Castle slaves, the Council ordered the surgeon to inoculate them all, together with such townspeople as might so wish. The method he used was the dangerous precursor of vaccination; it involved infecting the patient with active smallpox, though so mildly that it might cause only two or three days' fever. In 1796 the Council passed a vote of thanks, in recognition of 'the surgeon, Mr Adams, having, with indefatigable perseverance, successfully inoculated 1,760 persons, including Company's soldiers and Company's slaves' Since the population of Cape Coast was estimated at 11,000 or (in the slump after the abolition of the slave-trade) 5,000, quite a large proportion of the townspeople must have taken advantage of the offer.

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The occupants of every fortified station were divided and subdivided, with exceptional clarity, by their status and pursuits, and the knowledge of these distinctions is relevant to understanding the nature of the accommodation provided. It so happens, too, that old plans frequently specify the use of each room in the building. For architectural studies it is therefore requisite to describe the social structure in considerable detail, nor can the methods of administration be ignored, because these also affected the arrangement of the buildings. Perhaps the following account contains overmuch factual detail; the information, however, would otherwise be inaccessible to almost all inquirers because of the language in which the original documents were written or the rarity of the publications in which they are printed.

The Portuguese administered Elmina Castle and the subordinate forts through a Governor ('Captain General'), who, in fact, was the King's representative and held correspondingly absolute powers, including full civil and criminal jurisdiction. The number, functions, and salaries or wages of his subordinates were, however, defined by royal enactments; in particular, an enormous document of 1529 reformed and regularized the whole establishment, apart from the soldiers. The Governor's own salary, without his perquisites, virtually equalled half of the total emoluments received by the fifty-five officers and lesser civilians subject to him at Elmina. The disparity, however, need cause no surprise; the castle was organized on the lines of a feudal household, the Governor being equivalent to a bailiff-in-charge, and his expenses were similarly heavy. He appears to have been responsible for the entire cost of the soldiers, whether at Elmina or at Axim (and later also at other stations); there must always have been some dozens of them. The royal document ignores them, and likewise makes no reference to mulatto or free African employees, nor to the permanent force of slaves. The castle necessarily constituted a virtually self-sufficient community, with a clerical and mercantile staff and workmen skilled in all the essential handicrafts; in these respects it set a precedent copied by
the subsequent Chartered Companies of other nations, but they did not imitate the feudal aspects of the Portuguese system, which appear distinctly from the list of the posts as established in 1529. The salaries or wages they carried are stated in thousands of reals, a small silver coin of the time. The Governor's salary, 800, was augmented by an allowance of 20 apiece for ten men working under his personal orders, although two of them might be slaves, and so not entitled to pay. The highest-salaried of his officers (at 70) were the doctor-surgeon and the two commercial secretaries or accountants. The chief trader received 50, plus an allowance of 121 apiece for four men working under him. In 1566 his scope was enlarged by the abolition of two posts, those of the superintendent and secretary (each at 40) for the sale of garments usually second-hand - and of wine; probably the posts became redundant owing to the importation, instead, of new cloth from India, which required no special care. Thirteen officers, presumably for military and general duties, received 40 or 30 each according to whether they came of noble or common extraction. The King's chaplain (40) said a daily Mass for the soul of Henry the Navigator. The priest-in-charge (50) and two other chaplains (30) furthered the needs of the castle by teaching the mulatto children, but their chief occupation was proselytizing the Africans, under the patronage of St Francis of Assisi (because the face of an image of that saint turned black on reaching West Africa, as it might well do in the moist atmosphere if it had been painted with white lead). Only one other member of the staff was paid on an officer's scale (at 40); he was probably the works superintendent, but the word used might equally mean a sergeant. The remainder, who received 30 or 20, comprised an apothecary, a barber qualified to bleed patients, and the supervisor of the infirmary, the overseer of the oven, a blacksmith, a cooper, two carpenters, two masons, a tailor-darnar (to mend the second-hand clothing, no doubt), and two bombardiers or armourers. Four women, paid 2 each, kneaded dough and served in the infirmary. Every person was entitled to a daily issue of four loaves (if he were ill, of soft white bread) and some wine, and once a month to three pints of both olive-oil and honey, and six of vinegar.

This establishment of 1529 remained in force almost unchanged, certainly till 1607 and probably till 1637, when the Portuguese surrendered Elmina to the Dutch; in general, the posts still carried the same salaries in spite of a depreciation of the currency.

When the Dutch forced the Portuguese off the Gold Coast, they and the English and the Danes already had a generation of experience in conducting their East India Chartered Companies, and applied a comparable system in Africa. The Companies of these nations, and of

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France, Courland and Brandenburg, adopted almost identical means of administration. The Governor, in every case, also commanded the headquarters castle, and was chairman of a Council which included the commanders of all important subordinate forts. The Governor convened a meeting whenever a matter arose that required discussion, which, as the Minutes show, was generally responsible in tone and always well informed. Every officer present had, in fact,
served many years before the Council promoted him to the charge of a major fort, and it frequently changed the commanders from one to another. They should perhaps be termed managers rather than commanders, because their regular duties were commercial, but the diplomatic and military aspects of the post raised it to a status for which there is no modern equivalent.

The Governor, having previously commanded a subordinate fort, might himself direct the commercial activities of his castle, but if there were a large volume of trade he delegated them to one of the most senior officers. In the Brandenburger Company, this mercantile officer ranked almost equal with him, because the Company's objective was to attain predominance, if not exclusive rights, over a district already partially occupied by Dutch and English forts, and obviously the Governor would be engaged in diplomacy or war. The regulations, therefore, provided that the Governor should have sole control over military affairs and personnel, and the chief merchant be solely responsible for trade and barter (though in case of attack by Europeans or by Africans he should lend the Governor the assistance of his staff). Every Company, of course, put its army under the Governor's orders.

A nominal roll of the Dutch establishment, which must have formed a precedent imitated by the other Companies, was recorded in 1645 eight years after the expulsion of the Portuguese. The monthly salaries (quoted in florins) varied according to a man's length of service or other qualifications as well as his grading, but give a fair indication of the relative importance assigned to each post, especially if read in conjunction with the allowance received for living expenses. Free board and service were provided only for the senior officers. At headquarters, Elmina Castle, these comprised: the Governor (300 fl. plus half the proceeds of the citrus juice sold to ships), treasurer (72, plus one-third of various revenues), chief merchant (90), and the Commodore in charge of the dockyard and coasting vessels (80). The Company's only military officer was an ensign (39); although he sat on the Council whenever matters within his competence arose, he ranked among the junior officers, whose differential allowances ranged from 30 florins in

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his case down to only 8 per month. The others were: a lay preacher (36), two assistant merchants (26 and 24), and a cadet (14). Of the eight European artisans, the armourer (20) took precedence, though the highest paid was the smith (28); all drew the same allowance (12). The sergeant (18) was also on that scale. The allowances were graduated downwards from i i to 8 florins for the five other non-commissioned officers (who were paid 14 to 1 I), the sixteen upper-grade soldiers (io) and forty-five common soldiers (8); the drummer received 2 fl. extra to his pay as a soldier. In all, the Governor's subordinates at Elmina numbered eighty-three. The castle also kept one hundred and eightyfour slaves, men, women and children - who would spend their whole lives working for the Company.

The fort at Mouri, the earliest Dutch possession, had not yet lost its importance. The commander (60 fl.) was assisted by three junior trading officers, and the garrison numbered twenty-eight, with a sergeant-in-charge. A lay preacher (30)
and a surgeon (25) must have ranked as junior officers; like the others on the Coast, the surgeon was unqualified. The carpenter was paid only slightly less (24); a coppersmith (14) and two 'lads' (paid only 6 and 4) completed the establishment, with one hundred and fifty-six slaves. At Axim, the commander received 46 fi., and his one assistant (12) was obviously a man of little experience; a preacher (28) may have been on the regular strength, but the surgeon (28) had come on detached duty from Elmina. Below the rank of officer were the armourer, the cooper and a garrison of twentythree, including the sergeant-in-charge; strangely enough, the slaves likewise numbered twenty-three. The small fort at Accra was commanded by a man of long service (70), that at Shama by one of little standing (24), and each was supplied with an appropriate assistant (24 and 8) but no artisans; the garrisons numbered respectively eight and four, the slaves twenty-one and fifteen. The four coasting vessels were crewed by fifty men, who received from 48 down to 4 fi. and included at least one free African, employed as cook on wages (14) that exceeded the salary of many Dutch officers. Two solitary junior officers (8) resided at places between the forts, and another at Beyin, off to the west; one occupied a hut on a Dahomey beach, while an officer and a 'lad' traded up-river in Nigeria, somewhere near Benin. According to these data of 1645, the Dutch Company's servants then numbered two hundred and twenty-three, and its permanent slaves four hundred and nine - one hundred and seventy men, one hundred and fourteen women and one hundred and twenty-five children. A good many of the slaves may have formerly belonged to the Dutch at Mouri.

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and others, no doubt, had changed owners upon the expulsion of the Portuguese. All the adults were paid wages, in the form of goods which they bartered in the market; theoretically they received just enough for their essential needs, but with care could retain a surplus; one old woman's life-savings amounted to 9 oz. of gold. There were already two classes of slaves, and the division (which persisted in all the Companies) may therefore be assumed to have originated under the Portuguese. The 'indoor' slaves performed more or less skilled work; teams of the men were trained by the various European artisans, while a few women had specific duties, such as laundry-work, and others were put to general or domestic service. The Company supplied the 'indoor' slaves with all their food, or with goods in lieu. Among the 'outdoor' slaves some specialized in gardening, building, etc., but many were unskilled labourers, commonly used for such purposes as carrying goods to and from the landing-place, or cutting and fetching the timber required by the dockyards. They grew most of their own food; one occasion is recorded when they 'asked for four or five days off in order to prepare their land for sowing', and the Governor agreed, justifying his decision in his official diary by noting that the Company provided little of their sustenance. Nearly all the officers of 1645 would seem, from their names, to have been Dutchmen; a German from Rostock formed the most notable exception, because his post of treasurer ranked next to the Governor's. But a junior officer, with the
strikingly Dutch name of Jan Geelondonck, is known to have been the son of a Portuguese sea-captain by a slavewoman whom he met when held prisoner by the Dutch (presumably at Mouri, for this occurred in 1623-4). There may perhaps have been other mulatto officers, and almost beyond doubt there were mulatto soldiers. A considerable minority among the soldiers belonged to other European nationalities; in spite of the phonetic spelling of the nominal roll, it is possible to recognize many German and occasional French and English names, as well as some that are Portuguese but could equally belong to mulattoes, or even to pure Africans. Some months later, the deaths were recorded at Elmina of William Hill, soldier, from 'Wals, England', and the drummer William Kellington of 'Jorchier', a word identifiable (with unusual ease) as Yorkshire. The epidemic in which they died had already carried off the drummer at Mouri, the only other on the Coast, and no surviving European soldiers being eligible, Africans were appointed to replace them. Yet not a single African name can be detected on the nominal roll - even the sea-cook appears as 'Antony Jansz, Negro', and the identity of every other must be concealed under a European name. There may, actually, have been advan-

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tages to be gained by enlisting local men, besides the obvious fact that the diseases of the country had less effect upon them; they could be selected from knowledge of their characters and abilities, whereas the European soldiers tended to be undesirables in one respect or another, and were equally or more prone to desertion, when they usually tried to enlist with another Company, but often were returned.

When the Dutch Company was re-founded in 1675, its area of operation was still primarily the West Indies, and in West Africa was now perforce restricted to the south-eastern part of the coastline, owing to English and French naval successes in the north. This concentration of effort and the rising profits from the slave-trade gave the new Company a chance to remedy the failings of its predecessor. More forts were built, and each old fort received a great increase of personnel, both civil and military; the total military strength was doubled. Probably the quality of the officers improved, and with the higher revenue it must also have become feasible to offer salaries which would attract qualified medical officers.

The Companies of other nations lacked comparable resources. Next in importance was the English Company, with a wider range in Africa and consequently even less opportunity to match the Dutch standards. The staff and garrison at headquarters were much smaller, and at subordinate forts derisory. At the beginning of the eighteenth century, when the Dutch owned eight fair-sized and two miniature subordinate commercial forts, all upon the Gold Coast, the English maintained six there and three elsewhere (one each on the Gambia, in Sierra Leone and on the Slave Coast), as well as four slightly fortified stations. The English headquarters, like the Dutch, was protected by a military outpost, but the strength of Fort St Jago, overlooking Elmina Castle, vastly exceeded that of Fort Royal, ineffectively placed on a dead-end promontory near Cape Coast Castle. The English forts, almost without exception, did not reach the average Dutch size,
to which Cape Coast Castle approximated; in every case, too, the structure seems to have been shoddy, whereas the Dutch buildings were sound.
The French enjoyed the most spacious headquarters of all, since the whole of Goree Island served as their castle (defended by a purely military fort at either end), but elsewhere they possessed no stone buildings. At the mouth of the Senegal and on the Slave Coast they built in mud, on the Ivory Coast in wood, and till 1700 they held in each of these areas only a single fort capable of resisting the feeblest attack; the English had, in fact, captured and demolished the northern stations in 1693. The French Company's resources and effort fluctuated in accordance with royal or ministerial whims, which provided the

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maximum support soon after 1700, but even then it lagged behind the English. In 1692-5 the Danish Company held no subordinate forts. The residents of Christiansborg comprised the Governor, five officers besides a chaplain and a surgeon, an armourer (but apparently no other free artisans) and a garrison of thirty-one non-commissioned officers and soldiers. How many out of the total of forty were Danes, or even Europeans, is unknown; when the Company began operations, German officers seem to have been as prominent as Danish, and a treacherous officer of 1679 is said to have been a Greek.

Brandenburg-Prussia, which had entered the African field under the guidance of Dutchmen, continued to rely on Dutch commercial officers and usually appointed Dutchmen as Governors; the military seems to have been exclusively German. The Company held Arguin Island with twenty men, while the establishment on the Gold Coast slightly exceeded the Danish. The headquarters at Princetown was a better building than any other on the Coast except Elmina Castle. Otherwise the Company possessed only one very small commercial fort and a predominantly military post on the way to it, but the ambitions of a warlike African ally promised opportunities of aggrandizement, at the expense of the Dutch and English.

Shortly after 1700, therefore, the Dutch safeguarded the approaches to Axim by placing at least one fort - there may have been two - near the Ankobra river, probably for military use exclusively. In the same period, they also built a commercial fort at Beraku; it proved to be the last of their foundations. In 1717, however, they bought out the Brandenburger Company and so reduced competition, but lost Arguin to the French before they succeeded in wresting their other new acquisitions from African occupants.

Meanwhile the other nations had begun to improve their position the French with the least success, except in causing nuisance. The English gradually rebuilt Cape Coast Castle and their subordinate forts on a larger scale, replacing walls of unsound structure, and founded several more posts on the Gold Coast; only two of these, begun about 1724 and 1768 respectively, were large enough to entitle their commanders to a seat on the Governor's Council. The Danes likewise enlarged Christiansborg, and added a chain of three forts and six minor stations (more or less defensible), extending eastwards from it as far as Keta, where in 1784 they laid the foundations of the latest commercial fort in all West Africa.
The organization of the Danish Company was, naturally, re-shaped to keep pace with expansion, and followed the Dutch and English precedents. The Governor, who was also commander of Christiansborg, might undertake nothing of importance without the agreement of the commanders of the three forts, who composed his Council (whereas the Dutch and English Councils included, in addition, senior officers at headquarters). The Governor received an annual salary equivalent to 3,720 Kroner and an expense allowance of 1,860, out of which he regularly provided meals for his officers. The commanders' salaries varied from 1,860 at Ningo to 1,488 at the two other forts; at the lesser stations a junior officer or a mere soldier might be in charge. Four officers at Christiansborg also received 1,488 - the accountant, secretary, chaplain and chief surgeon; the next grade, at 1,116, included another surgeon (at Ningo), and a catechist ranked with the junior officers at 928. The lowest class of personnel was paid by the month (37-45 Kr) and comprised 'reserve assistants' and the chief surgeon's mulatto dresser. Both surgeons, as in other Companies, received a fee in respect of every slave shipped overseas. The permanent slaves numbered over two hundred; so, too, did the indented labourers.

A tabular summary of the Danish establishment, published in 1796, specifies the race of personnel; excluding the Governor, there were forty white men, seventy mulattoes, and five Negroes (one of whom held a very responsible post, being the overseer of the servants and permanent slaves). All the officers were Europeans, together with two of the four artisans and six of the ten non-commissioned officers, thirteen of the sixty-two active soldiers and - surprisingly - two of the five pensioners on the spot. One of the mulattoes was the schoolmaster's assistant, one an artisan, and the rest were military; if common soldiers, they received a wage of 30 Kroner, compared with 37 for a European. The English, too, employed local men in increasing numbers, mainly as soldiers, but the school at Cape Coast Castle created (at first, intermittently) a small class of literate mulattoes and Africans, capable of higher work. So the staff of Dixcove Fort in 1789 included a 'black writer', who received Ci8 a year - half as much as the sergeant or the gunner.

The sole peculiarities of the Danish system were the small membership of the Council (a natural provision in view of the relatively small scale of operations) and the exclusive employment of white officers (which may be explained on the same ground). Numerically the Danish Company's civil establishment roughly equalled that of Cape Coast Castle, where the English kept a garrison almost half as large as the force spread among the ten Danish stations. The English, towards the close of the eighteenth century, held six large subordinate forts, the Danes three, the Dutch nine; four other Dutch buildings which ranked

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as forts were actually smaller or weaker than one of the Danish minor posts ('lodges').
At the beginning of the nineteenth century, the very idea of fortified trading-stations was becoming obsolete, and many of the buildings were more or less ruinous or actually abandoned. There remained, fully habitable and defensible, in the north only the two forts from which the nucleus of Portuguese Guinea was administered, and in the southeast a majority of those upon the Gold Coast. There the number soon was further reduced, following the abolition of the slave-trade; one by one the buildings lapsed into decay.

The speed at which a fort could become untenable is noteworthy; the cause lay in the climate and in lack of maintenance rather than in faultiness of the original structure. As the English Governor explained in 1780, the commanders of forts built 'nothing material to the fortifications', but they did 'alter apartments, windows, doors, etc., as their taste or whim points out' The regulations made neglect inevitable; the commander of a fort was required to defray personally the cost of all repairs to the building, as well as much other expenditure which might reasonably have been charged to the general funds. Even if he felt inclined to spend his own money on repairs that might wait for his successor, he never knew how much he could afford for the purpose, so much of his expenditure under other heads being unpredictable. Whether, for example, he obtained the fort's day-to-day supplies free or by purchase depended on the health of his slaves. The arrival of a few warships would entail the firing of salutes which might exhaust his personal stock of gunpowder, and even compel him to borrow from the Company's, the reserve for war. Such visits would also deplete his table allowance, which was calculated to cover meals for himself and subordinate officers.

For large jobs of repair, one fort could sometimes borrow workmen from another, while new construction was, of course, undertaken by the Council (sometimes on an ad hoc grant from London). A commander with a seat on the Council obviously stood a better chance of getting financial or practical help with his building; on the other hand, his attendance at meetings involved leaving his own work to the second-in-command, who might be inexperienced. One such case, in 1780, inspired a threat of resignation to the Governor, from Commanda: The expenses I have already incurred, by my absence from my concerns here, makes me inclined to give up the command, (100 per annum with the profits of the trade not being sufficient to counterbalance the extra expenses and Second's table ... I have

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no Company's slaves but are employed on the Company's account, therefore have at different times bought large quantities of wood. I must either quit the Council or my fort, till a better falls to my share. Getting Seconds, one after another (in my absence), unacquainted with the place, people or customs, they will ever be grossly imposed upon; I alone suffer on these occasions.

Sources roughly contemporary with that letter are most informative about the castle slaves. The men, by this time, were almost invariably highly skilled, the women less so. A glimpse at the English system of training is afforded by a decision of the Council (1788), to take off the Slave List of Commenda three boys
'of a proper age to be apprenticed' and bring them to Cape Coast Castle 'to learn the business of carpenters' Slaves' wages (paid of course in goods) were graduated according to sex and age; they continued alike in sickness and in health, and the superannuated received pensions. The Danes paid a man the equivalent of 4 Kroner a month, a woman 2, some of the young girls only one; these rates were the same as for a free labourer, whose earnings would be pooled with his whole family's, whereas a slave had no one to contribute to his or her support. Slaves were consequently obliged to supplement their wages by taking private employment outside their official working hours; no doubt they helped to build the European style houses into which the wealthier townspeople gradually moved. The English, however, paid their slaves double the free rate; moreover, when they transferred a party of slaves from the Gold Coast to Dahomey, the wages were supplemented until the newcomers became acquainted with the local ways and could buy cheaply. Individual cases calling for exceptional payments were recognized; for instance, a woman who took charge of orphaned babies demanded a mother's pay for her subsistence, and the Governor himself awarded her an allowance.

Strict rules governed the treatment of slaves, and no evidence suggests that they were predominantly meek; the better workmen were irreplaceable, and knew it, so that the two who 'beat the sergeant in the garden' (at Commenda) may have been exceptional only in the manner in which they expressed their self-respect. At Cape Coast, where the slaves had long been incorporated with the people of the Lower Town, they always joined in fights between it and the Upper Town; on one occasion four or five of them were killed, on another occasion the Governor prevented their leaving the castle, whereat, he writes, 'I really thought they would have mutinied.' The known instances of runaway men-slaves and runaway soldiers approximately balance, in spite of the enormous disparity in numbers. The women scarcely ever ran away. A laundress who did so, from the remote English fort at Beyin, made her way to Cape Coast Castle, and was added to the strength there, without punishment; her excuse is not stated.

Every castle slave could be assured of complete security for life, save for the gravest misconduct; very rarely did the Council inflict the supreme penalty of selling a castle slave for transportation to America. One so sentenced, in 1788, had run away four times from English forts 'without good and sufficient cause' Twelve years later a slave, convicted of stealing goods unloaded on the beach, was kept in irons till a worm infection in both legs became so aggravated that he was no longer saleable overseas. The Council therefore decided to sell him in the Cape Coast market in return for rum, which would be added to the public stock - rum being one of the common substitutes for currency.

The castle slaves remained in service long after the abolition of the slave-trade. At a parliamentary inquiry of 1816, evidence was given that they were then free, except for the obligation not to leave their employment, and had no wish to do so,
since they were well paid and cared for, and could look forward to a comfortable retirement. Little is known of the system whereby Companies obtained long-term indented labourers. Mumford, a town where no fort existed, habitually supplied large numbers of these 'pawns' to the English.

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VERY fort contained personnel of the same classes - senior and junior officers, free artisans, soldiers, slaves for indoor and outdoor work - and usually had in its pay (and sometimes on the premises) free Africans or mulattoes. The number in each class varied in accordance with the volume of trade, the size of the building, and the distance from another fort that belonged to the same Company, particularly from the headquarters castle. If the distance were scarcely more than a day's journey by canoe or by one of the Company's little coasting vessels, the place would be thinly staffed, because sick men could be quickly replaced or a doctor be called to them, jobs requiring craftsmanship could be done elsewhere or an artisan sent to the spot, while a threat of war would probably not materialize till reinforcements could arrive. Moreover, any surpluses or deficiencies in the stock could be rectified; a commander might, for example, return 40,000 gun-flints in exchange for a firkin of butter, or a keg of molasses for one of brandy. If necessary, he might even get supplies from a foreign fort in his neighbourhood. But the most isolated of lesser forts never approached self-sufficiency to the same degree as the headquarters; when the Dutch maintained a trading-station at Cape Mount, it was entitled to demand assistance from Elmina, seven hundred and fifty miles away, and the English actually administered their fort at Whydah from Cape Coast, three hundred miles away. Even a headquarters, though, was not always self-sufficient; in 1778 Cape Coast borrowed cartridge paper from Elmina, which two years later 'spared 55 fathoms of new five-inch cable - weight 274 lbs - at one ounce of gold per hundred pounds', for a schooner of the English Company. But intercourse with other stations did little to mitigate loneliness, because their mutual business was usually arranged by letter, and only the members of the Council or the Company's seamen had occasion for regular journeys. But whenever an officer had the chance to go visiting he took it enthusiastically, and would not hesitate to undertake many hours' travelling by canoe or (especially in later times) in a hammock carried by one or two couples of men. Officers of

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different Companies frequently entertained one another, and almost invariably preserved superficially amicable relations, although business rivalry led them to employ spies and engage in plots. But evidently they intrigued for excitement's sake as well as practical advantage. Both motives perhaps inspired, in and around 1779, 'the indefatigable pains and perseverance, peculiar to the Dutch, with which they by degrees endeavour in future to bring about their beloved and political but diabolical plan' - to force the 'English' town of Commenda into uniting with their own protectorate, across the river.
The alternating tedium and strains of life in an isolated community, often under conditions of mental or physical distress, found expression in grumbling and bad temper. Even in as large a community as Cape Coast Castle, open dissension and quarrelling at the Governor's table (in 1780) made the accountant resolve that he would accept no more invitations to dine there; he also disliked the maudlin and assertive recollections of the elderly Governor. In 1788, the Deputy Governor was struck in public by another officer. The commander of Dixcove, less culpably, hit the officer of the guard, who broke into his room one evening in 1801; on investigation, the Council mulcted the commander of three months' salary, reduced the assailant's rank, suspended him and mulcted him of six months' salary. A few months later, an officer at the same fort struck another who had failed to get his window-blind repaired; the suspension in this case was made sine die. The file has been preserved of one English investigation; it is entitled 'The Case of the Sergeant who struck and drew blood from the Bumboy' (a free African who supervised the loading at the beach), and goes into the question of whether the offence was committed on a day sacred to the Fantis, and the insult thereby aggravated. Brawling among the soldiers figures in the records (especially the Dutch) with monotonous frequency.

The Europeans could enjoy extraordinarily few recreations and did not practise all of those available; there seems no mention of sailing for pleasure before 1836, by which time also billiards had been introduced. Earlier, a senior officer would now and then invite all his colleagues to dine in the garden, or arrange for Africans to drum and dance there for their entertainment. The Dutch allowed men to hold the traditional kermess of their town of origin (Haarlem, Amsterdam or whatever it might be), and the other Companies celebrated national festivals. But the main feature of any conviviality was drinking. The Dutch favoured neat brandy or rum, the English mixed their brandy with lime juice, sugar and water; in general both drank to excess. The English Company allowed men to spend the night in the town and to bring women into the fort, but the Dutch inflicted heavy penalties for both practices and

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allowed men outside the forts only in daylight, when they would be almost continuously on duty; drink was their sole relaxation in the long evenings, and consequently, in the Dutch service, a larger number of soldiers were put on charge for drunk and disorderly conduct. Nor apparently did the quality or standard of behaviour improve when fewer Europeans were recruited, and recruitment might have been more selective. In 1779 the English employed less than ten white soldiers in all, and the Council wrote home despairingly on the topic of 'such drunken wretches as, for the most part, necessity obliges us to make sergeants'.

At every fortified station, a bell apportioned the hours of work and leisure, as on a ship. In daylight it regulated commerce, handicrafts and outdoor work; after dusk, when the gates were shut (unless the fort occupied an islet), the civilians took their ease by candlelight or palmoil lamps. The garrison, however, kept to a rota of guard duty all through the twenty-four hours. During the night (likewise punctuated by the bell), soldiers went the rounds two or more at a time; the long
perimeter of Elmina Castle required four, and a soldier of 1639-45 has left an account of their procedure (translated in the description of the castle itself). There, as at any other normal fort, the prescribed route led round the top of the defences, but an external patrol may have been regular if the fort stood upon a small island; the only known instance, at James Fort, in the river Gambia, is recorded in an exceptionally full description of the military routine, dating from 1732. In the daytime there are three sentries, one at the gate of the fort, one at the door of the Public Room, and another walking round the fort to see what boats come and go, to and from the island, and to report the same to the Governor; these are duly relieved every two hours. Towards the evening there is a sentinel posted on the bastions, within the walls of the fort, whose business it is to challenge all boats or canoes that come near the island, and if they refuse to answer at his three times challenging them, he fires his musket at them and by that means alarms the fort. At night, when the gates are locked (which is whenever the Governor pleases to order it), two sentinels patrol without the fort to take care that the slaves do not rise or mutiny, and that no boats come or go from the island without permission. Every now and then they cry 'all is well' if they find it so; but if they find it otherwise, they fire their muskets to alarm the fort.

At daybreak the gates were unbolted and a guard set by them,

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whereupon the slaves who lived in huts outside reported for duty. Local people, and sometimes Africans from elsewhere, might then come in to buy and sell, a lengthy process; no money was in use, but values could be reckoned either in weight of gold, or, by a strange convention, in terms of European currencies depreciated to a Coast standard. Meanwhile a great variety of other work was undertaken, both in the fort and outside it. The soldiers followed an almost undeviating routine, and in large establishments that must have been true of the clerical staff also, while the artisans there may have been continually busy, partly fulfilling orders for lesser stations or for ships damaged by rough weather. But wherever the personnel was small, the day must have been passed on a succession of odd jobs, often with intervals of idleness. As for the permanent slaves, those who performed the domestic services were usually kept to a routine, and some spent their lives working full time in the garden; in wooded localities, a team might be regularly assigned to cutting timber, which was then taken to the beach for loading on to ships. The unskilled slaves were used mainly as carriers. One of their regular tasks was to bring the firewood needed for household purposes; if there were enough of them, and if the local people were willing, they went into the forest themselves to cut the branches of young trees. The amount required was very large; to a report from an average-sized fort, Commenda, is attached the statement, 'I have bought all the wood which has been needed since I had command of the fort, and all the people of the town are so lazy that I can seldom have more than a hundred or two billets at a time.' On one occasion this commander ran out of firewood altogether, but was able to buy 700 billets on the next day. He had, in fact, no slaves to spare for cutting; 'Quashie Cuamah has
been laid up these eighteen months, and Coffee, the carpenter, more than six months; the women and their children are always sick, and I have nobody to do anything about the fort or garden.' There were actually innumerable things to be done at every fort, in connection with the occupants, their supplies, the goods and materials, the livestock (sheep and pigs; also cows wherever the absence of tsetse fly gave them a chance to live). In addition some portion of the buildings was nearly always undergoing repair or alteration, and the furnishings and equipment required constant attention. Periodically, too, it became necessary to clear the barrels of the cannon by firing charges of powder, or to give the exterior of the 'guns and carriages a new coat of lamp-black and palm-oil to keep out the weather', or to dry the gunpowder, by carrying it out from the magazine and spreading it to air all day. And, at shorter though irregular intervals, the arrival of a ship interrupted almost everyone's normal procedure.

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When the fort's look-out sighted approaching sails, the flag was hoisted and preparations were begun to receive the vessel. The cannon had to be made ready; if she happened to be a pirate or if hostilities had broken out in Europe - a fact which might not yet be known on the Coast - there would be some risk of attack, while a friendly man-of-war, or a ship carrying important passengers, was entitled to a salute of so many guns. If there were cargo to be unloaded, it was brought ashore by the canoes or small boats belonging to the fort, supplemented if necessary by the local fishermen's canoes, and, where a landing-stage existed, by any of the Company's coasting vessels that might be on the spot. The canoe-men were organized and directed by the bumboy, a free African employed by the fort; at one time, however, the English thought to check peculation by appointing a European at Cape Coast. The transport of the goods from beach to storerooms was done by the slaves, who had been accustomed from childhood to carry loads on their heads. The clerical staff must have been hard-worked, taking an inventory of the incomings, calculating prices, and marking off whatever might be withdrawn from their charge and put on board the ship, consigned to America or Europe. Her master would insist on haste, knowing that disease would soon incapacitate or destroy a proportion of his crew - quite a high proportion if he entered in the more southerly waters; too often the seamen's chanty scarcely exaggerated their death-rate there, in 'the Bight of Benin, where few come out though many go in' Some precautions against tropical disease were believed to be efficacious. In 1749, when the Admiralty sent a warship to survey the English forts, the captain was instructed not to lie as long as twenty-four hours in any river, not to let men spend a night ashore or drink palm-wine, not to set men to work on shore, and to excuse from duty any who were recovering from sickness. As a result, he was able to report with satisfaction that he had lost only ten men. If that number of deaths occurred in spite of his regulations, only two of which could have applied to the occupants of the forts, it might seem miraculous that any European should have survived the contractual period of residence - two years by early Portuguese rules, usually three by a Company's, though in individual cases four or even five years might be agreed.
In the case of the Royal African Company, the average expectation of life has been roughly estimated at four or five years. But the calculation (even if reliable) offers no real guide, because the rates of mortality always differed between one station and another, and at each of them fluctuated greatly; an epidemic might cause the death of one European in every two or three or four among several communities. Besides, the

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individual's chances depended largely on his rank. Many officers served for twenty years or more. Few soldiers are known to have been reengaged, and some were discharged for ill health, while a large number died within a year or two of arrival; their susceptibility to disease was enhanced by unsuitable living-quarters, poor diet and habitual drunkenness (also, at least in early times, by debilitatingly savage punishments). The effects, however, of strict discipline seem to have been little better; marines sent out from Brandenburg suffered extremely heavily, while of the first two companies of British regular soldiers who arrived in April 1823, only one man remained alive at the end of the following year. The occupants of the forts would inevitably have been subject to insect-borne infection, with malaria, yellow fever and, in some localities, sleeping-sickness, or dengue. In addition there were tropical complaints conveyed by the water used for drinking and washing, practically all of which must have been contaminated; in some cases it was obtained from open springs or ponds, or pits dug in a sandy beach, but in general the forts relied on cisterns, supplied by the rain that fell on roofs and courtyards. Lack of treatment, or unskilled treatment, must have aggravated many cases of illness. Only at a few trading-stations did the establishment allow of a medical officer, and the post could not always be filled, at any rate by a qualified man. In 1707 the English Governor complained that he 'has never a doctor on the Coast', and that one of his subordinates, 'ill of a fever', would, he believed, have died but for the arrival of a Dutch ship which carried a doctor. On such occasions members of the rival Companies helped one another. In 1646 the Dutch Governor at Elmina writes: 'Received a letter from the English at Cormantin; they ask for two pots of small beer for the Commander, Francis Charles, who is ill - which I sent to him.' And the Dutch surgeon, who happened then to be at Mouri, was about to go to Cormantin when the news of Charles's death reached him. In later times, the Companies provided better medical arrangements, but the outlying forts still depended either upon asking the doctor to make the journey or upon sending the patient to him. 'I send William Smith, sergeant, by this canoe; he has been ill some days, and prayed me leave to go to the hospital of Cape Coast for the recovery of his health' - so, in 1777, wrote the commander at Commenda to the Governor. In 1796 the officers at Cape Coast decided to found a smallpox hospital, by raising a subscription and restoring for the purpose the mouldering shell of Phipps' Tower, which stood on a suitably isolated hill-top, but the scheme lapsed when they found the masonry had been rent by light62

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ning. In the following year the Governor's Council appointed as assistant surgeon an applicant who had 'produced satisfactory certificates from the medical and anatomical professors in Glasgow, of his having regularly studied during two sessions in that university'

The Companies professed to care also for the spiritual health of their servants, though none to the same extent as the Portuguese had done, and the English notably less than the others; French zeal went so far as to order that no brandy be issued to those who failed to attend morning and evening prayers. But even the Portuguese had sometimes been without a priest, though their Elmina establishment allowed for four, and in Protestant countries there were few candidates for chaplaincies involving a notoriously short expectation of life. The Dutch evidently began with the intention of keeping the post filled, and provided a small library of devotional books to go with it - a catalogue of 1645 is preserved; soon, however, they were obliged to resort to unordained preachers, who also did what they could to doctor the sick. One of these men served at Elmina from 1642 to 1646, when, after nine or ten days' illness, he inflicted mortal injuries on himself, but made a devout end, 'having godly and comforting meditations constantly in his mouth' He and his colleagues belonged, of course, to the Dutch Reformed Church, and had endeavoured to prevent soldiers of other sects from holding services; the authorities, however, allowed an undenominational meeting every Sunday, when the congregation prayed, read and sang as inclination suggested. The only place for religious functions then available was the Governor's dining-hall, since the Portuguese church had been converted to business premises, but an imposing chapel was built soon after. The Danes waited another century before building a chapel at their headquarters (and at first put it to exclusively secular uses), although apparently they had experienced less difficulty in finding a succession of chaplains, in their case Lutheran. One, Rask (1709-12), afterwards became chaplain to the Bishop of Trondheim, and there published a useful though prosaic account of the Gold Coast, with special attention to the plants cultivated by the Europeans; Monrad (1805-9) showed a less constricted outlook in a larger book. The main duty of a Danish chaplain was to teach the mulatto children. The English periodically employed unordained schoolmasters, till, in 1766, the Society for the Propagation of the Gospel offered the part-time services of the Rev. Philip Quaque, an African who had been trained in England to become a missionary to his people. Having accepted him as chaplain, the London merchants enacted that all their officers at Cape Coast should attend divine service at 11.30 every Sunday, or be fined 7s. 6d. unless the Governor

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should cancel the service on some adequate ground. One Governor, at least, had already proved most resourceful in finding grounds, as his diary shows (1777-8): 'No Divine Service this day, the Hall and other apartments being just fresh-painted' - or because there had been a tornado, or most of the garrison were too busy or afflicted with coughs or colds, or people might come ashore from the ships in the Road, or Dutch visitors had arrived. Another drawback to the
presence of a chaplain is cynically recorded by a Danish officer: after many years of complaining that there was no one to bury them or to christen their mulatto children, the Dutch eventually induced their Company to send out a minister, but regretted their importunity on finding that he held strong views against polygamy. The Dutch Company's Board in Amsterdam always prohibited concubinage with local women, but the practice flourished none the less, though in secret; the commander of Axim, in 1694, when crossing the bay to visit his mistress, turned back in alarm upon sighting a ship on which, he thought, the treasurer might be a passenger. The other Companies had already accepted the inevitability of temporary or permanent associations, upon which, indeed, they relied for producing the mulattoes who could be trained to their service from childhood. Actually no regulation forbade the presence of European wives, but very few can have come to Africa, nor, probably, did any of these survive for long. The Portuguese had employed some European women, but their example was rarely followed. The only English instance known was that on the Gambia, in 1708 or 1709, of a 'jolly strapping virago, sent over by the Company in man's apparel as a soldier ... but if they designed her for a more pleasing use, those that sent her might have spared their pains, for the garrison is seldom under such high feeding as to mutiny for want of a female conveniency.'

At few localities could the Europeans procure enough food, whether through their own efforts or by purchase; most of what they ate was imported, and largely of an unsuitable character. Only the highest-salaried officers could afford a reasonably good diet, and to obtain it consistently must have required ingenuity. English guests of the Dutch Governor were struck by the contrast between his dinners, at which 'thirty gentlemen' might be present, and the meals of their own compatriots. On one occasion in 1722, 'his table had ten dishes of victuals, an extraordinary show in a part of such scarcity, with variety of beer and wine, and an attendance of six Negro servants, each a gold chain round his neck, the largeness distinguishing grandeur.'

Officers senior enough to have dining-rights at the Governor's or even at a commander's table may have fared adequately, but the juniors suffered privations, and the soldiers of all nations must generally, if not invariably, have been badly fed. Wheat was imported and issued (charged against pay) in the form of biscuit, but stocks often ran out, and then guinea corn or maize was used instead. Since fresh meat could seldom be obtained, even by officers, and vegetables were grown primarily for the commander's table, the unprivileged Europeans relied on salted or smoked meat (they seem to have ignored the abundance of fresh fish), flour, cheese and butter. The English Governor's Council twice reduced the prices of such goods, actuated 'by the dictates of humanity towards the poor soldiers and other servants in low stations' After the second reduction (1779), beef cost 5d. a lb., pork 6d., flour 5os. a barrel, and butter 5os. a firkin. Hams and tongues, wine and beer, seem to have been too
expensive even for junior officers. The underprivileged European, indeed, was the worst sufferer under the rule of the Companies.

RELATIONS BETWEEN FORT AND TOWN
A MOST (not all) Company stations, the money and effort expended Lon guard duties and other measures of security were regarded as L insurance against attack by Africans rather than by Europeans. Yet an individual trader could live safely among Africans, though in absolute isolation from other white men except when a ship happened to call. Moreover, only in one instance was a fort established against the wishes of the local population. That exception was at Keta. When a young officer of the victorious Danish army marked out the ground for the building, and saw the townspeople glumly watching, he consol ed himself (being a warm-hearted young man) by reflecting that, although nothing but military force would have induced them to cease trading indiscriminately with ships of any nationality, the fort intended to create a Danish monopoly would also serve them as a refuge in time of war. Besides, the Danes had relented to the extent of allowing them to sell foodstuffs to foreign ships, but not slaves, nor ivory.

Keta, thanks to a site almost impregnable by nature, had been one of the few African states which could choose free trade in preference to European military protection and the attendant lack of competition. Anywhere else, the normal procedure was for a tribal state to invite some European Company to build upon its territory; a site would be offered as a gift, or for purchase, or (more often) to be leased in perpetuity on an annual rent. The Company was granted a monopoly of the export and import trade, and in return guaranteed to defend the town in case of attack. A typical agreement, concluded in 1681 on behalf of the Elector of Brandenburg with Chiefs of Eastern Nzima, summarizes their side of the undertaking: 'You bound yourselves by oath to trade with no one whomsoever except Our ships and people, also to bring the neighbouring places in with you into such an arrangement, and to indicate to Our officers a site whereon to build a fort, and to accept Us as your protector.' The European commitment is expressed most clearly in the contract whereby the Danes bought the land to build Christiansborg; one of the clauses binds them to assist the townspeople in case of attack, whether by Europeans or by Africans.

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Such obligations were always fulfilled, generally without casualties to the defence. No reliance whatever, though, could be placed on European promises to aid a place where no fort existed. When certain Chiefs had been driven into exile under those circumstances, they justifiably told the Brandenburgers: 'We have so often been betrayed by those Dutch, we no longer believe in them; in peacetime a trader comes and barters for so much gold, but in time of war they go away.' With their departure, moreover, the tribe lost the opportunity to procure more hand- guns, and (as was far worse) to replenish the powder and ball expended.
The inhabitants of a place with a fort built their huts where the guns could give protection, and in the last resort might take refuge within the fortifications. Romer, a Danish officer, writes that the people of Ningo, ‘and all their household goods, have on occasion been received and took up their quarters in the court and on the batteries, where there was no space to fire a cannon without injuring women and children’; even so, the Danes had been obliged to refuse admittance to over a hundred persons, who were consequently seized by the enemy. The overcrowding at Dixcove, when the siege of 1750 began, would have caused extreme difficulties and shortage of food and water, if a ship had not taken away the non-combatants; the Governor sent them to another English fort, with a letter to the commander instructing him to care for them as if they were his own people. The problem of space was, however, solved at many forts (including Ningo at a later date) by building a special outwork as a refuge, large enough to hold the entire population. A fort, therefore, should have been assured of the goodwill of the local people whenever danger threatened them; on occasion, too, the men fought for their European allies against other Europeans or distant tribes. At times of no apparent danger, equally happy relations might prevail, and, to judge from the relative paucity of contrary evidence, that may have been the case at most places most of the time, in reality or superficially; in any state, of course, a faction opposed to the regime would eagerly work up feeling against the Company. And either the regime or the Company sometimes nourished grievances of long standing, as well as finding new grounds for resentment. At some places the fort was weak and the tribal state powerful, at others the opposite was true (and there the houses of the town were huddled close under the protection of the guns). In either case, the stronger party to the alliance would be tempted to take advantage of its position and make overbearing demands or excessive charges. But the causes of trouble are rarely specified in the old documents, and then, of course, only from the European viewpoint. On several occasions a fort bombarded the town it was

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expected to protect, and equally townspeople attacked and sometimes killed servants of the Company, or even massacred them all. The people of Winneba, where the English eventually (1812) destroyed their fort in disgust, after the murder of the commander, had roused the Governor in Council, twenty years earlier, to declare: 'The Winneba people have not only now, but for many years past behaved themselves in a manner that requires the severest punishment; they having at all times (within my recollection) acted as if they would be master and not subjects to the English nation.'

Sometimes disputes in the market brought individuals of the two communities to blows, whereupon their friends joined in and serious riots developed, with deaths on at least one side. At Cape Coast, in 1803, the Governor acted upon the request of his officer John Swanzy, and confined an important local man 'for tendering base metal to him in lieu of gold'; an armed mob then gathered, threw stones into the castle, and threatened to seize Swanzy. Since the Paramount Chief refused to
intervene, the Governor imposed a fine of 40 oz. of gold, which the Chief refused to pay; the Council decided that a shot should be fired through his house. The Chief of any town where a fort stood was paid a retaining fee; so, too, was the Chief of any place important, for example, as a source of timber, lime or indented labour. A whole series of lesser payments to the Chief and notables had originated as a means of buying goodwill, but became traditional and so, in practice, obligatory. In fact, the Council at Cape Coast in 1780 recognized the ‘impossibility of curtailing the accustomed charges’, which are listed under the following heads: Christmas presents, commander’s customs, ground-rent and water custom, Sunday’s and Wednesday’s liquor, ‘with other usual presents and dashes’ to the Chiefs. The commander’s customs must have included liquor given for ceremonies or African festivities, as well as the receptions he occasionally held. These must have resembled, except in scale, a Dutch Governor’s farewell garden-party in 1645. He gave it for the Chiefs and other prominent Africans, and went accompanied by his mercantile officers and some ships’ captains. The guests ‘were entertained with ten casks and some bottles of wine, a cask of brandy, and three cows’ - presumably from the Dutch herd, then of ten head - ‘and by the evening were merry, and each went off to his house in great satisfaction’ Wherever a fort existed, virtually the whole population of the town must have benefited, regularly or at intervals, directly or indirectly. The canoemen, in particular, increased their earnings by the daily sale of fish, by helping to carry loads between a ship and the beach, sometimes

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also by plying for hire to other forts. Wealth that accrued to many families was used for the building of large houses in European style and technique. The number of local people employed continuously by a Company was, however, very small. The man of most consequence among them would be a business agent, full-time or part-time according to the volume of affairs. One of them has left a handsome inscription, in Dutch, built into a house at Elmina.

No European before the nineteenth century is known to have spoken an African language; short vocabularies provided for the simpler needs of trade and person, and there was no lack of interpreters. The castle slaves must have acquired the rudiments of their masters’ language in childhood, while mulattoes generally were probably bilingual. Free Africans, too, could often make themselves understood in some form of European speech, either pure or pidgin. The earliest medium, Portuguese, outlasted the dominance of Portugal, remaining the linguafranca of the Coast (where words and turns of expression still persist). But the languages of successor nations gradually replaced it, each in the appropriate neighbourhood. As early as 1679, Barbot found ‘good English’ spoken by canoemen he encountered at sea, within sight of Elmina probably they lived at Cape Coast. But at Axim, though the Dutch had evicted the Portuguese thirty-seven years before, lingua franca was still known by, he asserts, ‘the greater part’ of the population.

The presence of a fort induced Africans from other tribes to take up residence, whether for trade or to escape trouble they had incurred at home; the Brandenburger Company, in particular, seems to have offered asylum to any
criminal. That the population of Cape Coast became very mixed appears from the fact that the slaves were accepted as full citizens of the Lower Town; since their ancestry had not been local, they could not have been incorporated into a tribal community. At Anomabu, however, the slaves suffered so much from the natives of the place that the Company enclosed their huts within a wall.

The value attached to the existence of a fort by the local people was demonstrated by the regret aroused through their abandonment. At Sekondi, the English fort lay ruined for a decade after the massacre of the occupants by a tribe allied with the adjacent Dutch fort, and eventually its restoration was considered only at the request of the Chief. He and his people wished, no doubt, to regain both military support (without which they could not preserve independence of action) and the competitive trading inevitable where two Companies operated side by side. Neither motive can have been valid at Whydah, where Africans continued, years after the French and English had withdrawn, to hoist the flags over the disintegrating mud remnants of the two stations.

**TYPES OF BUILDING**

The European traders recognized three classes of fortified trading stations: the largest were termed 'castles', those of intermediate size 'forts', and the smallest 'lodges'. There were, of course, many borderline cases, so that authors of the same period often differ in the status they ascribe to the same building. The distinction between a castle and a fort was purely one of size; so, on occasion, might be that between a fort and a lodge. There was, however, some ambiguity over the use of the term 'lodge'; owing to its derivation from the Portuguese word loja, meaning a large shop or merchant's store, it could be applied to an almost indefensible trading-post, which might take any shape, as well as to a miniature fort. In the latter case, the building could not invariably be simply a reduced copy of a normal fort; the smaller the scale, the greater the need for modifications to suit it.

In many respects the earliest foundation, Elmina Castle, set the pattern for subsequent buildings, because the same requirements persisted. It occupied a promontory, the neck of which the Portuguese cut by a ditch. Entry was effected by drawbridge, first to an outer fortified enclosure and thence to a stronger inner ward, precisely as in a common type of medieval castle; the inner ward was called 'the tower', and did, in fact, resemble a keep. Each enclosure contained rooms backed against the fortifications, and opening on a central courtyard - an enormous parade-ground in the outer ward, a mere patio in the inner. Externally each was rectangular (or nearly so), apart from a few salients with perpendicular walls - in modern parlance, towers - which stood especially at the corners and gave the defenders opportunity to shoot, not only outwards but also along the foot of the intervening curtain-walls. These towers were uniform in height with them. A taller tower served as a lookout, primarily to watch for approaching ships, and perhaps as a control post in case of attack. Behind the inner ward lay an extensive service yard, scarcely defensible and therefore reached independently by a path that led off from the drawbridge; there must also have been steps down to the landing-place outside the yard.

In 1482, when Elmina was founded, the medieval type of castle had
TYPES OF BUILDING
already been recognized as unsatisfactory, because it could not withstand bombardment by heavy artillery. For the past hundred years, special openings in the walls had allowed of defence by means of light cannon and hand-guns, but the design of Elmina was singularly advanced if, as seems likely, the corner towers were solid from the first, and

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FIG. I Anomabu Fort. Plan of fortifications as designed in 1754 so capable of bearing large cannon. At that date, experiments in the Mediterranean, by several Italian engineers, were just beginning to show promise of obtaining both greater resistance to bombardment and more efficient mounting of guns upon the defences. A new style with these advantages was standardized within the next half-century. When the Portuguese adopted it, they re-fortified Elmina, thickening the curtainwalls and adding new salients, which took the Italian form of bastions.
All subsequent forts followed that pattern; nowhere, except on

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Gore Island, was there space for the zigzag 'lines' which military engineers laid out in Europe.
The essential difference between a tower and a bastion, which were respectively the medieval and the Renaissance means of obtaining flanking-fire, is to be seen in the external walls, which in the former rose perpendicularly, but in the latter sloped considerably inwards, and so minimized the risk that a hole caused by bombardment might bring down the overlying masonry. Strictly, there should also be a difference in plan; a true bastion was placed with four straight external sides, set not at right angles but slanting so as to deflect cannon balls; it terminated with an acute-angled apex, the junction of two long faces, from which short flanks ran back at obtuse angles and met the curtain-walls approximately at right angles. All the angles were so calculated as to allow the cannon and hand-guns upon each bastion to command the adjoining curtains and the two visible sides of the next bastion. When an engineer drew a plan of a fort under construction, he prolonged the lines of the bastion to demonstrate the extent to which they allowed mutual support (Fig. i). In contrast, an exceptionally outrageous failure in this respect is illustrated on another old plan, which marks by dotted lines the shapes which the bastions ought to have taken (Fig. 20). But really these projections should not have been called bastions, since they were blunt-edged and thereby five-sided. At several other forts the word was loosely applied to three-sided works, in which one of the long faces met the curtain (Fig. 6 at top); the correct contemporary term for such was demi-bastion or half-bastion. Circular projections also were sometimes known as bastions, even when the face rose almost perpendicularly (Pl. 16, foreground); for these, too, there was a technical name, roundels. It would seem, in fact, that occupants of the forts thought of a bastion as any kind of
flanking-work, but they would probably have qualified that definition by insisting on the possession of remarkable strength.

Most of these 'bastions', whether or not their shape conformed with the strict usage of the term, were solid all the way up to the top platform, where the guns stood; none, so far as is known, consisted wholly of masonry, but the walls were very thick and the space within was packed with earth or sand. Alternatively, the centre contained a vaulted room, often pitch-dark and virtually airless, in which case it could only serve and that rather inefficiently - as a powder-magazine; if ventilating shafts penetrated the roof or walls, goods especially attractive to pilferers might be stored within, or the room might even be a kitchen, but more generally it was a prison for slaves awaiting shipment to America, or for resident offenders. With a solid core, there was always a risk that perco-

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loration of rain-water might swell the filling till the walls burst; the platform, therefore, was paved with stone laid in supposedly waterproof cement, usually so poor in quality as to need frequent renewal. But the weight of the cannon, and the shock of the recoil (when they ran backwards on their wheeled mounts), would, in any case, have tended to break up the best-mixed cement. The cannon fired through the parapet. The openings for the purpose normally took the form of arched ports, the sides of which splayed inwards to widen the arc of fire. Late in the eighteenth century, and earlier at sectors where there was no risk of being attacked at close quarters, the arch might be omitted and a mere splayed gap left in the parapet, enabling the gunners to elevate the barrel for the longest range. Slits for small-arms (muskets, etc.) were interspersed among the ports on the bastions, while along the curtainwalls rows of them opened through the parapet, or (as in the older parts

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F1G. 2 Ningø: Fort Fredensborg. Plan of slits for small-arm fire, 1956

of Dutch Commanda) formed notches in the top - a method usual in towers. In either case the sides splayed sharply (Fig. 2). Very rarely was a shelf provided below for the marksmen to rest their elbows (P1. 2 1 b).

The average thickness of curtain-walls was increased after the Middle Ages, to gain greater resistance to bombardment; there was space on top for a walk, generally several feet wide, as well as for a parapet not less than two feet thick. But at many forts the wall-walk was extended by the flat roofs of adjacent rooms.

At some places light cannon were mounted on roofs supported only by beams, but preferably a vaulted roof was built, which might carry heavier cannon. In a few instances, a battery consisted of a solid mass, heaped up behind the curtain and encased with masonry. The provision of a battery was usually restricted, for the sake of economy, to a point of extraordinary danger which called for an extraordinary concentration of fire-power; it might be directed against a neighbouring fort or, more often, towards
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the open sea (as a safeguard against bombardment by enemy shipping), or even towards the landing-place.

Because of the increased size and range of cannon, no station later than Elmina Castle was laid out on the medieval scheme, with a large outer ward and a compact, comparatively tiny, keep. Instead, each consisted, in its original form, of a single fortified enclosure, lined with rooms around a courtyard, though often the approach was guarded by an outer gate, set at the point of a little triangular outwork, called a 'spur', which was enclosed by a palisade or a low wall. If, however, the courtyard were too small for manual work, a service yard might be attached to some part of the exterior, and surrounded by a fence to ensure freedom from pilfering or annoyance. Many of the sites chosen were, in fact, cramped by nature, because the Europeans continued to build on promontories or on hills overlooking the beach; other sites were voluntarily restricted, in order to facilitate defence by a weak garrison. Both Christiansborg and the Dutch fort at Accra were eventually doubled in size by a less strongly fortified service yard alongside. The English (but apparently no other nation) extended forts, when the need arose, by building an exceptionally large spur, in the usual form of a triangle, outside the entrance, fortifying it properly and lining it with rooms; the remaining central space was used as a service yard, and possibly also as a marketing place. But none of these outer enclosures equalled the inner in extent, and scarcely any were quite as strongly fortified. Their walls were attached to the bastions on either side of the original entrance, and converged till they either met in a point or were linked by the outer gateway. The largest and most formidable examples ever built are at Cape Coast Castle and Dixcove (Pls 38, foreground, 8o); each had been preceded by a simple spur, which contained no rooms. The other English examples (Fig. 3) contained few rooms, and the enclosing walls seem to have been much lower than the fort proper, so that there was little to distinguish such spurs from the empty triangles of Dutch, Danish or French construction.

A unique pseudo-spur which the English built on James Island in the Gambia, in order to obtain more rooms, was soon demolished, probably because it constituted a potential danger. It contracted like a spur but was an independent unit, separated from the fort by a gap so narrow that no defender could have fired towards the ground unless he leaned over the parapet; if enemy troops had seized the building, they could scarcely have been dislodged, for the outer walls were of stone, roughly as tall as the fort, and the interior was filled with rooms. The external outline may conceivably have been an incompetent hybrid between a spur and a hornwork, a type of external fortification never adopted on

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the Coast (except possibly at Goree), though once proposed as a means of strengthening Anomabu.
Another type of outwork was formed by a low wall which enclosed the entire fort (Pls 43, 44). The Dutch merged it with a triangular spur at Shama (Pl. 72) and at Bereku (Fig. 42), but at Axim placed a spur farther out (Pl. 59b). The Danes at Christiansborg set the gateway of the outwork in a double bend, as though in substitution for a spur (Pl. 43), but at Keta they seem to have put the gateway in a straight section, parallel with the entrance curtain of the fort. In every instance, the outer wall was an addition, built in order to hold the entire local population in time of war. A fort without such a refuge could receive only a portion of the tribe, and the rest took their chance around the foot of the walls, where they must have been particularly liable to danger at night. When the Ashantis attacked Ningo in 1742 they captured over a hundred people who could not be squeezed into the fort, whereas, wrote a Danish officer, 'if we had had an outwork they would not have taken a soul'; outworks of that type at other Danish forts had 'frequently' proved successful, owing to the combination of cannon-fire from the bastions and small-arm fire through innumerable slits in the refuge wall.
Yet another type of outwork, a small defensive platform, was often built to secure the approach to the drawbridge; known as a half-moon2 or ravelin, its sides could be curved or straight, so that the outline might even be triangular. An example has been preserved at Fort St Jago (Fig. 5; Pl. 3); the platform stands well above the ground and is enclosed on either side by a low wall containing many small-arm slits. The earliest half-moon, at Mouré, seems to have been enclosed by palisades; the latest, at Christiansborg, remains only in outline, but is known to have been entered by a little gate-tower. The Brandenburger fort on Arguin Island (Pl. i) was exceptional in the oblique setting of the entrance, and consequently of the half-moon. When a visitor came through the palisade, he walked past a rectangular outwork, approximately half as high as the thirty-foot wall of the fort, to a doorway in the wall that curved to the south bastion; leaving on his right some cannon mounted on a platform, he next turned left into the rectangle and continued his tortuous way along the verge of a deep ditch and across it by a bridge, into the gateway of the fort.
This fort at Arguin, which the Brandenburgers had re-founded in 1685, was unique also in its general design. The polygonal outline exactly follows the edge
of the two-hundred-foot cliff around the promontory. The bastions (actually half-bastions) were equipped with guns facing in all directions; some of them commanded the wall-walk of the

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curtains, which were wide enough to take small cannon everywhere and bulged at one point to accommodate larger guns. In 1721, when the French captured the island and bombarded the fort till the garrison evacuated it, they found a row of one-pound mortars along the landward curtain, and seaward batteries at the same two sectors as in 1709, but the bulge contained four heavy cannon (six-pounders), four half-pound guns and three one-pound mortars.

The closest prototypes for the shape at Arguin were triangular. The early Portuguese fort at Axim likewise occupied a promontory, whereas Fredriksborg, the original Danish headquarters, stood on a hill just outside Cape Coast, and in each case the walls that encompassed the triangle ran straight, ignoring natural irregularities: bastions outflanked both corners of the wide end, while a curved battery and a half-bastion respectively filled the points. The same triangular scheme, with bastions or half-bastions at the corners, was adopted by the English in the early Fort Charles at Anomabu. The Brandenburgers at Akwida (Fig. 29), the Dutch at Bereku (Fig. 41) and the Danes at Ningo (1736) used the triangle as a preliminary towards a four-sided lay-out. To make Bereku square (Fig. 42), and so double the enclosed area, one side must have been demolished and two new walls built at right angles, outside its line. The transformation at Ningo presumably required less work, because it resulted in one long and one short end, parallel to each other and linked by side walls that slanted at corresponding angles; there were four bastions, and a continuous battery along the short end, which faced a lagoon, behind the sand-bar that must have served as a landing-place. The refuge outwork (an addition of 1750-83) is preserved only outside this part of the fort; it contains slits, a foot high, for small-arm fire (Fig. 2), placed as close together as was practicable.

As a rule (to which there were inevitable exceptions), the strongest defences and greatest concentration of fire-power were directed towards the sea, because trouble on land, though it might come more frequently, could not be as dangerous as an attack supported by naval cannon. The extreme instance of this preoccupation was given at Bunce Island in the Sierra Leone River. The English built a roughly square enclosure at one end, which happened to be raised above the remaining two-thirds of the island by a very steep slope, about fifteen feet high. The buildings, after being 'levelled' by the French in 1704, were slightly repaired, and then captured by a Welsh pirate in 1720, after which they lay dilapidated till shortly before another catastrophe in 1728. The energetic commander of that time had re-fortified, in stone, only the side fronting the one navigable channel, and enclosed the rest of the fort merely with a

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palisade, which offered little obstruction to tribesmen who waded across the other branch of the river. His improvements to the front had taken the unusual form of
adding curved salients to the old curtain; those at the corners covered three-quarters of a circle, and in between was a semi-circular projection interrupted by a flight of steps, the entrance to the fort. These works were solid up to the base of the parapet, and those at the corners may therefore be classed as roundels or circular bastions. But only one dubious analogy can be cited for the intermediate semicircle, a tower at Princestown which had been added within the previous twenty years; it, too, is solid up to the level of the curtain-walk, but there is a room above, and only the outward face curves, the flanks being straight. No other instance is known of a salient midway along a straight curtain.

Wherever feasible, the lay-out of even the largest fortifications was so compact that the face of every curtain-wall could easily be swept by guns mounted on the corner flanking-works; a square plan was regarded as the ideal. Only very small forts tended to be oblong, merely because the inner buildings were usually confined to the back and sides of the courtyard, which could therefore be quite narrow. One great fort, however, was monstrously elongated; this was Fort St Louis, the French advanced headquarters in Senegal. It was built of mud, and so ill-designed that admittedly any resolute enemy could have taken it, even without artillery. The front straggled along the river bank for well over two hundred feet, with a width averaging only some fifty or sixty feet, although there was plenty of space behind, where, in fact, two lines of palisade enclosed yards that could have made the whole station square, but their actual shape was extremely irregular. A bastion of sorts stood at each corner, but so 'badly laid out and so small in area that you can scarcely work a few small field-guns' That description, written about 1785, would have been equally true sixty (or even perhaps eighty) years earlier, but about 1680 the exterior consisted alternately of simple mud curtain-walls or stockades, and round thatched towers, which were really huts of the local African type.

Normally a fort was far outflanked at every corner by a bastion, a half-bastion or a roundel, the precise shape depending on the arc of fire required more than on the nature of the ground. But precautions might be relaxed for the sake of economy, wherever the result did not seriously impair security. At Akwida, a small fort (or rather, perhaps, a lodge), only one fa-ade was outflanked, but the backs of the bastions extended across to the other, terminating flush with it as mere batteries (Fig. 30, Pl. 77a). Bastions were placed only on two diametrically opposite corners of certain square forts; one of these was a French

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reconstruction of a ruined Dutch work at Goree, and another, founded later (i 700) by the same Governor, was the mud-built Fort St Joseph, which occupied an islet in the River Senegal. A very small English fort (better classed as a lodge) at Sekondi was also rebuilt in that form shortly before 1709. But by 1727 it had been incorporated within a much larger enclosure, which was outflanked on the north and east corners by

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FIG. 4 Gorle: Fort Vermandois. Plan, ?r68o
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(Fig. 4). But the situation and purpose of the Goree forts were exceptional; the rest of the island was strewn with civil buildings, and the forts performed mainly the dual function of overawing the slave population and guarding against attack by sea. They were not, however, purely military; Fort Vermandois (or St Michel) also gave safe housing to the Governor and a few of his senior officers, and airy pavilions for their enjoyment stood upon the bastions. Fort St Jago at Elmina, the oldest purely military work, is still well preserved, though changed in appearance, because the British added a storey to the two buildings it contains, roofed the bastions, and made lesser alterations; several portions have recently been stripped of the accretions but no thorough restoration can be attempted for practical reasons (Fig. 5, Pls 2, 3, 4a, 29). The hill of St Jago (so named after an early Portuguese chapel) overlooks Elmina Castle, and the Portuguese massed troops on the summit in 1625 when they defeated a Dutch invasion. Twelve years later, Dutch use of the hill as a gun-position seems to have been almost wholly responsible for the Portuguese decision to surrender the castle. Fearing that some enemy might repeat their own exploit, the Dutch promptly fortified the hill-top with a quadrilateral earthwork, which at first was not flanked; the bank is said to have been only seven feet high, but a palisade is represented upon it on some drawings. A tower of no great height contained the gateway, while at the back of the courtyard a single-storeyed building housed the garrison, who came from the castle on a rota system. Replacement by the stone fort (which the Dutch called Conradsburg) is said to have been completed by 1666, but the exterior is shown complete on a bird's-eye view of the previous year (Pl. io). The curtains were already twelve feet high, flanked by two great bastions on the inland corners and by two half-bastions towards the castle; there was enough room on the flat hill-top for complete bastions of identical size on all four corners, and the differentiation seems to have been a measure of economy. No danger could be expected from the direction of the castle, and the half-bastions were therefore required merely to command the approach to the gate, whereas the corners at the back overlooked two routes that might have been taken by invaders, and which were connected by a valley in the foreground. A circular watch-tower stood above the gateway in 1665 and for some years thereafter (Pl. 9b). In 1671 - the date is known from an inscription3 - the fort was surrounded by an outer wall slightly higher than a man, as though to form a tribal refuge (Pls 2, 4a, 12); the
intention, however, must surely have been to fill it in time of war with both Dutch and African fighting men, for at least seventeen gun-ports were provided as well as an unknown, but probably large.

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**FIG. 5 Elmina: Fort St Jago. Plan, Feb. 1774**

- Inner gate
- Outwork
- Base of tower
- Inner wall-walk
- Door to powder magazine
- under bastion
- Armourer's bedroom
- Guardroom
- Sergeant's bedroom
- Cistern
- io Commander's room
- x I Commander's hall, over barracks
- 12 Commander's bedroom, over powder store
- 13 Stair, over porch to storeroom
- 14 Inner wall-walk
- 15 Raised walk
- 16 Bread oven
- 17 Shelter
- 18 Shelter
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The number of small-arm slits (choked when the top was raised by the British to make a prison yard). The shallow ditch, which runs only along the entrance side, may perhaps be a relic of the original earthwork. The ravelin, to which the drawbridge leads, is quite late; its site appears vacant on a drawing of 1724-5 (Pl. 1. iib), but the plan of 1774 (Fig. 5) omits only the sentry-shelter, which was added shortly before 1799 and entailed the sacrifice of several slits. The dates of the existing inner buildings are somewhat uncertain. The watch-tower looks polygonal on Barbot's view of 1679 (Pl. 12), but he may have been confused by a balcony halfway up, and by the movement of his ship; if the present square tower (Pl. 3a) did not then exist, its construction cannot have been long delayed, and a later drawing by Barbot, engraved posthumously, suggests that the shape really was square. The rooms on either side must be contemporary with the present tower or later; they remained single-storeyed into the British period. The other building at the back of the courtyard appears on Barbot's view; it was two-storeyed, with doors and windows on the upper floor opening on to the wall-walk, below a fire-step (but when the British added a third storey, they converted the walk into rooms). Probably both the existing buildings had been completed by 1682, when Barbot stated that there was accommodation for double the number of the regular garrison - an ensign and twenty-five soldiers, relieved every twenty-four hours. Two other Dutch forts seem to have been purely military, built to defend the approach to Axim against African allies of Brandenburg. The earlier, 'Fort Elisa Carthago on Mount Ankobra', consisted merely of temporary buildings inside a palisade, and lay immediately above a steep slope to the great River Ankobra. Yet it may perhaps be identified with 'a lodge called Ankobra' which, so a Dane was told in 1709-12, stood an English mile from the bank, and three or four miles from Axim. He describes it as 'well-fortified by nature; it is situated on a fairly
high hill, the way up to which is not wide enough for three men abreast. A stone-built Fort Ankobra is known from a plan of 1750 (Fig. 6), and should have left identifiable ruins, but they have not yet been found. Its military character appears from the paucity of storage space. The entrance system involved a spur and an inner yard, apparently in imitation of Axim Fort. The half-bastions at the back may have overlooked a slope of no military significance, but their shape seems to have been dictated primarily by that of the hill-top rather than by economy. The only other military fort which may have been of comparable size, the short-lived Fort Royal, outside Cape Coast, was an English reconstruction (begun in 1699) of the triangular Fredriksborg; a distant view shows only a tower. Two slightly later outposts of

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Cape Coast certainly possessed towers, to the foot of which rooms may have been attached; nothing is known of the one at Queen Anne's Point except that in 1709 it mounted six guns and was garrisoned by six men, who might possibly have been housed in the tower, but a proposal to convert Phipps' Tower into a smallpox hospital surely implies additional space. Provesten, the tower outside Christiansborg, was much larger and easily contained its garrison (PIS 43, 44). A circular watchtower outside Elmina, built about 1800, is well preserved but not comparable. In two even later outposts of Cape Coast Castle, Forts William and Victoria, the tower formed the combined barracks and look-out of

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a circular battery. Of all the nineteenth-century outposts, only the Dutch batteries around Elmina seem to have been up to date by the standards of Europe. Some of the lesser trading-stations, the so-called lodges, reproduced in miniature the shapes of either commercial forts or military outposts. The best of the Danish lodges, Augustaborg at Teshe (1787), was simply a fort of little less than average size, exceptionally well built, and perfectly regular; indeed, if it had been English-owned, it would certainly have ranked as a fort. It measured nearly seventy feet square, and nearly twenty feet more between the extremities of the four bastions; these were very short in the flanks but over twenty feet long on each face, where the parapet included a pair of arched gun-ports and three slits for small-arm fire. Three bastions were solid, the fourth contained the powder magazine; all have
now been demolished. The interior, of which there are substantial remains, was divided rectangularly by thin walls of stone, with wooden lintels over the doorways to some rooms; there is nothing to indicate an upper floor. Another Danish lodge, half a century older, was destroyed to build the fort at Keta but is recorded by a seaman's drawing of 1777 (Pl. 4b). It too must have been of regular design externally, with four bastions; a doorway near the right edge may indicate the entrance to the powder magazine. The two-storeyed building, evidently of wood-frame construction and thatched, seems to have either widened out or turned a corner towards the back of the courtyard (in which grew trees, and an awning gave additional shade). A large compass design of yellow and red bricks, like that preserved outside Elmina Castle, lay on the sand close to the left wall, for the benefit of ships' captains whose compasses needed resetting.

Another existing lodge, Fort Vernon at Prampram, exemplifies the generally lower standards of the English. It must have been founded at least ten years before the survey of 1756 (Pl. 5), at which date the walls consisted of stones laid in mud, and therefore had collapsed whenever the rain penetrated the covering of whitewash. Repairs and reconstruction have since caused surprisingly little change to the design, owing, no doubt, to their habitually piecemeal nature. The section conveys a misleading impression of the siting; the building stands where the edge of a plain meets the gently shelving beach, and in 1756 the distance from the entrance of the courtyard to the sea measured 470 feet. The single bastion still remains, overlooking the plain to the north; another was added facing the sea, on the diametrically opposite corner (as at English Sekondi), but had fallen into ruin thirty or forty years later. At that time proposals were sent to London for a rebuilding on a much larger scale, to make a fort of normal rectangular plan, flanked by four bastions.

A Dutch lodge at Tema, abandoned in 1781-2, was described some thirty years earlier as resembling the tower Provesten, outside Christiansborg. The largest of the French wooden buildings at Assinie looked, in 1844, like a short two-storeyed house; the enclosure in which it stood, together with several low huts, was fortified by a palisade, planned like the wall of a fort, with straight sides and circular flanking works at the corners. A similar plan had been used, more than a hundred years earlier, for the thick timber piling that safeguarded the shore-line of James Island against both erosion and hostile shipping (Pl. 64). The palisade which at first surrounded Akwida (Fig. 29) is less comparable, owing to its half-bastioned corners; moreover, the builders intended soon to replace it in stone. The height of a palisade is recorded in the instance of Bunce Island (1726); the stakes were sunk four feet in the ground and rose twelve above it. There must have been dozens, probably hundreds, of lodges which have left no intelligible remains - usually even the site is unidentifiable - and the old writers rarely hint at the character of the buildings. The English lodge at Anashan, however, was described in 1709 as 'a thatched house garrisoned with two men', but in 1692 it had contained two trading officers, a corporal and six soldiers, and previously it had ranked as a small fort. Another lodge, on the
Gambia, is known from a description and plan by Francis Moore, who founded it in 1733. The building, of mud and thatch, was composed of three sections, each thirteen feet wide. The front was covered by a veranda (which he called by the Portuguese name alpendre); a door at its centre gave on a hall, which stretched through the middle of the building to a back door, forty feet away. There were no other doorways on the exterior; off the hall there opened, on the right, three storerooms, and on the left, two lodgings (each of twenty feet by the inevitable thirteen). A circle of ground outside was enclosed with a fence of 'split cane, ten foot high, in the nature of a hurdle, supported and well propped-up with long sticks'.

Moore's pride in his new 'factory' suggests that it was superior to the average lodge of the time. Many of them contained only a single junior trading-officer and a few slaves. One of dual function belonged to Mouri Fort; it was situated in a village upon a hill-top from which, so Tilleman states, 'in clear weather you can see eleven Christian castles and lodges ... Here a Dutchman stays in a small house, trading a little and at the same time looking out for ships arriving, because from here you can see far out to sea.'

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This requirement for a look-out was met at great forts by a watchtower. The really essential needs in the smallest stations may have been limited to lodgings and storage, but a hall was indispensable in communities with several officers (for the common meals, and as an office unless another room were available for that purpose). The accompanying kitchen, and often a larder too, provided only for officers, and the soldiers might be obliged to cook their food in a corner no more spacious than the privy. Some kind of turret or gable in which to hang the bell was always provided. A cistern to hold rain-water was almost a necessity, and the lack of one at certain quite large forts can be explained only by the facts that imported materials were essential for it and that its construction called for skill which was not always available locally; hence only a headquarters castle could afford more than one cistern, though in dry seasons a shortage of water was a regular occurrence at many forts. In the later period the demand for water must have increased with the rise in the slave-trade, which entailed holding great numbers in custody for weeks or months till the arrival of a ship bound for America; special prisons were built for the men and women. Apart from any slave-prisons that might exist, all but an insignificant proportion of the inner buildings consisted either of lodgings or of storage space. There were always goods for sale, goods bought and awaiting shipment to Europe, and vast quantities of supplies for the occupants. The Brandenburger Company even ordained (1682) that provision be furnished for eighteen months, in case of unforeseen siege or attack; it was to include bread and flour, oil, salt, soap, train-oil, brandy, meat and sausage, shoes, stockings, caps, shirts and coats. As to the lodgings, unprivileged residents usually sweltered in rooms built against the curtain-walls and therefore devoid of cross-ventilation, while even on the upper floor the breeze might be blocked to some extent by a parapet beyond the wall-walk. There are extraordinarily few indications that anyone gave a thought to the
modification of European architecture to suit the Tropics. The earliest instance may be Moore's veranda of 1733, but he seems to have been inspired by a scheme traditional in Portugal. A genuine innovation can perhaps be detected in the foundations of an out-building at Ningo, probably identical with the 'long building' recorded to have been built in the refuge outwork by the Danish Governor of 1789, to contain a granary and workshops. The room was at least sixty feet long - one end cannot be traced - and only eleven feet wide, and the floor-platform extends five feet beyond the walls on both sides, as though for two verandas.

The Danes also used an unparalleled lay-out for a building of unique purpose, a hill-resort and convalescent home, twenty miles inland from Christiansborg. Apparently it was founded some years later than the huge plantation of 1802, with which it may have shared the name of Frederiksborg. The flat ground of the former plantation is now entered, at the village of Kpomkpo, through an avenue of aged tamarind trees, which points towards the remnant of an administrative building and onwards to the broken escarpment of the Akwapim range; the resort stood on one of the lower slopes, nearly a mile beyond the plantation, and a couple of hundred feet higher. The site was cleared and surveyed in 1956 (Fig. 7). The dense bush that surrounds the ruins is of secondary growth, as though the Danes had made a clearing considerably larger than the area they inhabited. The site slopes gently down from the north-west towards the southern boundary, where there is a sharp drop. So the upper terrace (i) emerges from ground level on the north but stands man-high on the south, where steps (7) rose through the wall. The adjacent lower ground (2) cannot have been level unless it had been retained to a height of at least three feet, as seems likely from the fact that the wall which might have done so was given a footing (3). A very slight gradient prevails throughout the great court, the south edge of which is supported to a height of two to four feet above the ground outside, but the east wall stood on the verge of a steep bank, down which the masonry has fallen; into the northern part of the bank was cut a terrace, three or four feet lower than the court, to carry a pair of rooms (6). The entrance, which is still marked by a gate-post (4), interrupted a line of rooms which gradually descended along the north side of the courtyard; a footing (3) levels the foundation. Between the foot of the upper terrace (i) and the entrance (4), only the external wall of the rooms remains standing (nowhere more than five feet high) and any partitions must have been of mud or wood; but the eastward rooms are well preserved, with beam-holes that indicate a standard
height of over twelve feet. All the walls consist of rubble and mortar, plastered and whitewashed on both faces; the windows were covered with wooden lintels. Only at the north-east corner was there an upper floor (5), where the walls still stand to a height of eighteen feet; a window, high up, looks eastwards across the roof of the lower terrace (6), but there is no doorway below in that direction. The original plastered outer face of the lower corner room (5) has become exposed through the partial collapse of the later wall that divided the terrace rooms (6). They appear to have been built, as a single room, contemporaenously with the tall corner, since the north wall is of one build externally all the way from the entrance (4) to its termination above a footing (3), though in the last stretch the height was reduced and the width increased to buttress the tall corner of room 5. The south-east corner of room 5 is outlined

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externally by a vertical joint, beside and above the doorway from the court to the lower terrace (6). Rooms of light construction apparently filled the east end of the court, but have left only scraps of foundations.

This hill-station, though known to have been fortified, looks absolutely indefensible according to the existing remains. The western boundary merely retains the slope above the upper terrace (i), while the masonry of the southern retaining wall rises only a couple of feet above the courtyard, and the amount of fallen material would not have appreciably increased the height. The south-east corner might have formed a serious obstacle, owing to the fairly steep declivity below, but the rooms on the lower terrace (6) were both entered from the easy slope outside. The north-west rooms could be approached from almost level ground, and there is no trace of any outer wall to close the entrance (4). The whole area therefore must have been enclosed by a palisade, which may have lined the western and southern boundaries, but elsewhere stood at quite a distance from the existing masonry. The corner with the upper rooms (5) may be regarded as a look-out tower. The window gave a splendid view, especially of the plantation, which lay on a route favoured for inter-tribal raids and ultimately was abandoned because continuous warfare prevented maintenance; if (as the records hint) the officers of the plantation lived on the hill, the Danes there must have kept a particularly careful watch over the plain.

1 Spurs were built by the Danes at Christiansborg and Keta; by the Dutch at Accra, Ankobra, Apam, Axim and Cormantin, also (combined with refuge outworks) at Bereku and Shama; by the English at Accra, Beyin, Cape Coast Castle, Dixcove, Tantum and Winneba; by the French at St Louis and Whydah.

'The term 'half-moon' was also applied in a letter of 1726 to a curved projection from the curtain-wall on Bunce Island. The precise sense is dubious in an English proposal of 1779 to preface the restoration of Sekondi Fort by building a half-moon and mounting in it five guns pointing towards the neighbouring Dutch fort (PRO. T 70. 152 f. 28). As a temporary expedient, breast-works were to fill the backs of the ruined bastions and battery, consequently the half-moon was probably intended to stand against the exterior of the old fort; there could scarcely have been a ditch around that site.
3 The inscription remains in situ at Fort St Jago, built into the inward pediment of the outer gateway. The slab, of local stone, has flaked, with the result that some fifteen letters have vanished from the left column of the inscription, but comparatively few from the right column. Enough remains to restore the sense: 'The outer defence (buyten wal) was built by order of Governor (Directeur Generaal) Dirck Wilree, Anno 1671.' Cf. photograph of 1951, Transactions of the Gold Coast and Togoland Historical Society, I.I (1952), fig. 7. An inscription over the inner doorway is no longer legible except near the right edge; the top line ends BRCH, the next couple of lines have perished, and the three lowest end OR DEN, NERAAL, BURCH, and therefore presumably referred to Governor Valckenburgh, the founder of the stone-built fort.

MATERIALS AND STRUCTURE
THE never-ceasing problem which faced the Europeans in West Africa was the absence of local materials suitable for buildings of a permanent nature. At most places on the Coast the stone is too hard, too brittle, or too flaky to be cut easily into rectangular blocks. A Danish officer writing about 1750 observed:

The masons we send to the Coast must usually learn for a couple of years before they can build in African stone; the stones are broken off the rock and whether they are round or flat are used for vaults or other walling. The stones we break in such a manner near Ningo are as hard as marble, those of Accra as soft as sandstone.

The masonry generally, therefore, is rough; for fine jointing and coigning, brick was preferred. But none of the many experiments in baking on the spot produced a durable brick (whether for lack of the right clay or of skill), and scarcely ever did anyone try to make roofing or flooring-tiles locally. Mortar could be made, but deposits of limestone are rare, and although lime could be obtained anywhere by burning shells collected on the beach, the quantity was limited; the discovery of an old heap of oyster-shells excited immediate interest. The waterproof cement needed for coating flat roofs and lining cisterns was never satisfactory if made solely from local materials. African timber is excellent, but either too hard and intractable, excessively heavy, and, of course, liable to disease, or so soft that termites easily devour it.

Europeans starting to operate on the Coast might at first build in African technique and materials, with mud (already locally known as 'swish') and thatch, which are comparatively lasting in Europe or in dry hot climates, but peculiarly vulnerable to the local conditions. While the thatch roof was being renewed a heavy rain might melt the walls, and termites and other pests were always at work in them. Hence comes the verdict given in an abstract of an English Governor's letter of 1696, 'swish no good material to build with.' Later, only lesser tradingposts, or forts distant from any source of stone, continued to be built in
this manner. It is noteworthy that there seems no evidence (whether documentary or still to be seen on the spot) of the use of a tar dado, as an insect-deterrent and preservative, till well into the nineteenth century. Labour, both skilled and rough, was another problem. The Portuguese brought out skilled artisans to build their first castle, with soldiers for the rough work, but afterwards established a permanent labour force of slaves, trained in European methods of construction, who carried out their masters’ designs under supervision. Especially at English forts, the supervisors were often ignorant, materials scarce, and the number of slaves inadequate, owing to the penny-wise pound-foolish policy of the Committee in London. In a report on a survey made in 1750, a naval officer declares that money would be well spent in sending out good instructors, ‘for the Africans are very tractable to learn trades’. Materials were, necessarily, imported in bulk from Europe. The Portuguese alone imported stone, and that only in small quantities, ready cut, for details; an old belief that Elmina Castle was sent out to the Coast prefabricated is based on a misunderstanding. But vast quantities of bricks came out as ships’ ballast. Their use for coigning and vaulting was introduced by the Portuguese, but further developed by the Dutch, for a brick vault kept out the weather as well as being antproof. Hundreds of thousands of small yellow or greenish-buff bricks, such as paved courtyards in Holland, can be seen in Elmina Castle and the other Dutch buildings, together with a small number of the harder red variety of the same size. The Brandenburgers and Danes followed the Dutch example, vaulting and coigning with bricks from their home countries. So too did the English, but around 1750 they also used brick for whole structures; the interior of the Dixcove spur consists of soft, crumbly, locally-baked bricks, including some cast from specially shaped moulds to compose architectural ornament, while the fortifications at Anomabu are built entirely of imported brick. Every underground cistern, so far as is known, was floored, walled and vaulted in brick. The largest are those at Elmina, of which one is evidently Portuguese, because of the large red bricks used both in it and in the associated down-pipes, which are rectangular, box-like in section; they conducted rain-water from neighbouring roofs to the channels that run beneath the paving of the court till they discharge near the spring of the vault. In a few cisterns, ribs project from the vault, which more often is simply a prolonged round arch. A Dutch scale drawing for a projected cistern at Takoradi divides the interior into four vaults, by interrupted cross-walls; the whole was to measure some thirty-four by eighteen feet, and each bay gives a clearance of over nine feet at the INTRODUCTORY spring and three more at the centre, except in the end bays, where above the middle of the vault rises a well with a draw-hole opening into it. Only at Arguin and at James Fort in the Gambia are there known to have been cisterns above ground. Brick was also the material used for lightness’ sake to build the parapets that line stairs and landings, flat roofs and the inward side of the fortification wherever it was bounded by a sheer drop (Pls 26a, 63b). Such parapets were designed in the manner of balustrades with a continuous hand-rail at
approximately waist-height, and the thin wall was almost always lightened by a row of lancet openings; the builders evidently valued lancets as a means of saving brickwork rather than of ventilation, but may sometimes have had that purpose also in mind, though actually not much wind blows through unless it comes straight to. The wedge-shaped top of each opening was formed by leaning two bricks together; for the rest the sides stand upright. The solid base usually projects above the adjoining floor or steps. Sometimes the plaster covering makes the openings curve at the top or bottom, though the bricks, of course, are rectangular. Lime must have been the second largest import; it was sent to Anomabu in casks which held six or seven hundred pounds. Besides its obvious uses for mortar, plaster and whitewash, it was an ingredient of the waterproof cement known as tarras. The word (a corruption of the German Trass) really denoted another ingredient, a volcanic stone which was quarried in the Rhineland and exported through Holland. The pumice-like lumps were pounded and sieved to a powder, which was mixed with a double quantity of slaked lime and not more than its own bulk of sand, or none at all if the wall would be under water. This, at any rate, was the recipe followed by Smeaton when he built the Eddystone lighthouse, but whether it was invariably applied in Africa may be doubted; the prompt leaking (i756) of a great cistern at James Fort, Gambia, is likely to have been caused by an admixture of sand, for economy's sake, to the waterproofing paste. The English, characteristically, seem often to have been incompetent with tarras, and also backward in adopting it in the first place; when in 1706 a ship arrived at Cape Coast with sixteen tons of it, they were 'at a loss how to use it', as well as out of sieves; the Governor wrote to London for information on 'how they prepare the tarras at Antigua. It is of great consequence to have such ingredients as will keep out the rain.' The same letter asks for at least 20,000 paving-tiles, of good quality and well burnt, to be sent by instalments. But the normal practice was to pave with bricks or with stone slabs, plastered for choice to smooth over irregularities. The platforms of bastions and the wall-walks were mostly paved with slabs laid

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in tarras mortar, and often surfaced with it; where the structure consisted of brick it was similarly treated.

Of the other building materials imported from Europe, nails always took first place. For the construction of Anomabu, fir-timber and boards, and even 'smith's work', were sent from England.

A single layer of boards usually served both as an intermediate floor and as the ceiling of the room below. Whether a ceiling was ever provided under a gabled roof is questionable, and climatically it would have been undesirable. Such roofs may have been as often thatched as tiled, in spite of the risk of fire. Whenever feasible, however, the roof was flat, or rather it sloped just enough (usually to one side only) to shed the rain into pipes; brick down-pipes, rectangular in section, can be seen dating from the Portuguese time onwards, but their rarity proves that less important buildings were equipped with perishable substitutes, which are more likely to have been of wood than of earthenware or iron. A flat roof, under the tarras surface, might consist either of the top of a vault or of beams covered
with planks. An extraordinarily inefficient method is known from Romer's account of the Danish fort at Ningo: 'The roofs are carried on coco-palm trunks covered with lime and flat stones, on which the cannon stand, and every three or four years the ends of the logs rot so that they fall into the storerooms; the work of removing the guns and replacing the trunks takes nearly two months.' Standards of construction differed between the various nations (and, of course, according to the purpose and status of the individual building). The Portuguese concentrated their effort on fortifications and scamped on the residential and storage accommodation. Practically all but the earliest of Dutch buildings, and invariably those belonging to the Brandenburger Company, were soundly constructed. The French rarely built in a durable manner, and no example is preserved; the Courland Company's work seems to have been poor. The Danes made a slightly better start, and by 1770 approached, if they did not quite attain, the Dutch standard, even in some of their minor lodges. The English had already attained it at their important stations, but elsewhere continued to build in the most deplorable manner, a consequence of their chronic shortage of money and manpower (in relation to the number of their possessions). Their forts are one-half tumbling down for want of repairs, and the others not worth the name in comparison with the Dutch forts,' wrote the English engineer who had come to build Anomabu (1753), and he found only seven available bricklayers, European and African, though his fort was to consist entirely of brick. Three years later a more distinguished engineer, Justly Watson, gave the considered opinion that 'three or four men-of-war, of forty guns each, could easily put us off the whole Coast' As late as 1777 it was reported that Sekondi fort became ruinous every year, and in 1780 the Governor received this letter from Commenda, a fort of more than average consequence: 'I am sorry to inform you that yesterday the interior part of the Cook Room gave way, and it was with great difficulty that the cook escaped being buried under the rubbish.' By the normal English method of building, the walls consisted of misshapen lumps of stone laid in a mud packing. In Watson's words, instead of mortar they use nothing but a loomy earth withinside the walls; which is not only unproper, but also incapable of making a cement. When a wall is so built they plaster it with a thin coat of mortar, and whitewash it, which looks very well for a time, but when once the mortar cracks and is washed away by the heavy rains, the water gets into the loomy earth withinside the wall, and swells it so as to bulge the stonework, and then all or most of the wall falls down.

The evils of that method had long been apparent. As early as 1707, the Governor informed the Company 'that your forts are very much out of repair, and that there will be no charge to do it but lime and the labour of your people, but by the number of your people they can't be put in repair in seven years' Two years later he reported that 'the newbuilt flankers at Sekondi are like to fall through the ignorance of the builders' - another frequent cause of trouble. The only satisfactory solution, to rebuild completely, was actually adopted throughout Cape
Coast Castle, and in a large part of Commenda. But even in 1773 good masonry was restricted to these two and the recent forts at Anomabu and Beyin; the remaining old forts were still 'composed of clay and a very little stone with no admixture of lime unless what was used in plastering the outside' A later stage in English building may be illustrated by the decisions taken over a canoe house at Cape Coast. In November 1788 the Governor's Council ordered it to be built 'of clay and stone, except the piers next the water, which must be built of lime and stone, the windows secured by iron bars, and the entrance by hanging gates, and to be covered (at least for the present) with thatch' Two months later, it was estimated that the thatched roof should last about eighteen months, and the specifications were approved for a new roof, to be coated with tarras. But by the time the news came that the timber ordered for the roof was lost at sea, the walls of clay-packed stone had fallen, and the Council decided to rebuild in solid stone. The Companies also built in a purely African manner, with walls of

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mud alone and a thatched roof, relying on an annual coating of whitewash to stop the cracks and exclude the rain. Most structures of that nature were either of early date (for the Company in question) or unimportant, unless no stone could be found within a reasonable distance. For that reason the French advanced headquarters on the Senegal and their other fort high up that river, as well as the international group at Whydah, were so built throughout their existence. But when the Danes built the fort at Keta, they went to the trouble of conveying all the stone ninety miles by sea from their Christiansborg quarry. On the Ivory Coast the French were content with wood alone for their second fort at Assine, regardless of the danger of fire; but some bricks can be seen on the site of their fort at Amoku, where they made their last attempt to gain a foothold on the Gold Coast (1786-1803). Almost every wall, however sound, was plastered smooth and limewashed. The white exterior of a fort was not only a means of conservation; it also called the attention of shipping, and a smart appearance attracted customers.

EARLY DRAUGHTSMEN
The degree to which any old representation may be trusted can nearly always be assessed from one kind of evidence or another. The difficulty is increased if the original has been lost and is known only from a draughtsman's copy or from an engraving, since mistakes are liable to have been introduced in the course of re-drawing, especially if the original workmanship had been incompetent (as it often was). Scarcely any confusion, however, has resulted from the practice of reissuing engravings from the same block or from a new one. The problem of identifying the sources of copies arises at its worst in relation to the drawings (of Elmina and Mouru only) in a manuscript collection of about 1665, Vingboon's Atlas. Of this there are several versions, complete and incomplete, executed by various draughtsmen who differed greatly in ability and in the accuracy of their copying. One of the lost originals represents work in progress, which can be dated to 1640-4, and some may be placed in the following
years. A slightly later compilation, Prince Eugen's Atlas (the 'Blaue Atlas') in Vienna, utilized Vingboon but also includes material dated 1665.

In a number of instances, a considerable body of work by one man has been preserved, in the original or by engraving, and so his credibility can be more readily assessed. Nine of such draughtsmen deserve individual consideration. The case of Barbot is peculiarly complicated (cf. Journal of African History, II, 1961, pp. 228-9). He was a Huguenot, who left France because of the revocation of religious toleration by the Edict of Nantes (1685), and settled in England. The manuscript journal he kept on a voyage of 1678-9 has been preserved, and contains dozens of drawings obviously fair copies from his own sketches - pasted into gaps in the text. As a rule he drew buildings only from his ship, and unless he landed or sailed unusually close to shore he could show little detail, and that at some risk of misrepresentation. Faithful engravings from duplicates of some drawings were issued not long after, accompanied by two plates incongruous in size and style - a view of Gore, dated 1680, and one of Cape Coast Castle, signed by Barbot's friend Greenhill and

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dated 1682. In 1682 Barbot made his last voyage to Africa, and returned with another and more desirable collection of sketches; not only had his draughtsmanship improved, he also had leisure to visit buildings, and re-drew some which he had previously represented unsatisfactorily. Yet Greenhill's was the only drawing of that year used in the set of engravings, which is therefore unlikely to have been issued appreciably later; that Greenhill's view was published before 1714 is certain because of its use as an inset on a map of Africa, signed by Moll.

Barbot's great book on West Africa was first written in French, probably before he took up residence in England, and for many years he seems to have abandoned hope of publishing it, but in 1711, shortly before his death, he completed a supplement bringing the material up to date. The entire work was published (in English) in 1732, and the illustrations include new engravings from Barbot's drawings of 1679 and many which must have been taken from those of 1682; his text actually refers to some of them, and in any case his style is recognizable. Again the engraver's faithfulness cannot be questioned; he was the eminent Jan Kip, who died in 1722.

The original Dutch edition of Bosman's book, published in 1704, is illustrated with engravings which cannot always have interpreted correctly the childishly crude originals, drawn by someone who died before he could complete the set. The omissions were made good in the second Dutch edition (1709) by an exceptionally adequate draughtsman, whose general reliability may be accepted because in certain cases his accuracy is proved by the actual remains of the buildings. The interval between drawing and publication cannot have been longer than two or three years in the case of either edition.

In 1726-7 William Smith surveyed the Royal African Company's possessions, on their instructions, and the resultant views and plans are preserved in many of his own pen-and-ink versions (now the property of the United Africa Company), and
in his Thirty Different Draughts of Guinea, a set of engravings issued with a list of subscribers dated July 1728. Very few of the engravings correspond with the drawings, some of which are clearly first attempts (not always successful) to represent structures too complicated to be shown straightaway in the final manner; the dimensions, too, are not always the same. In his manuscript plans he often recorded the upper level, though for the engravings he substituted the ground plan or a combination of the two; maybe he and the assistant who accompanied him made a practice of working gradually downwards, but, if so, they occasionally did not keep to it. They may even have drawn a published version from rough notes, perhaps after they sailed away from the place; two of the engraved

INTRODUCTORY
views give the impression of having been fudged up from sketches, and one might be a conflation of two existing pen-and-ink originals, but some additional matter is included too. Strangely enough, there are also discrepancies between two sets of engraved plans, the one in Thirty Different Draughts and the other, on a much smaller scale, apparently issued to accompany views printed from the large plates; a possible explanation is that mistakes corrected during the survey have been perpetuated as a result of sending the wrong drawing to one or other engraver. The reader can form his own conclusions from two plans which are copied from the pen-and-ink originals, but supplemented with the contradictory details present in the engravings (Figs 3.3,4, and Fig. 32). In the views the engraver habitually represented the jointing of masonry in buildings which were, in reality, whitewashed, as indeed Smith had drawn them. In one instance, a plan was engraved in mirror image of the original, in which the direction is correct. In connection with the re-constitution of the Company, the Admiralty sent H.M.S. Humber to examine and report on the English forts, and an officer hastily surveyed each of them - James Fort, Gambia, late in 1749, and the rest early in 1750. His plans were inevitably somewhat sketchy; they exist in duplicate, in the National Maritime Museum and (Gambia excepted) in the Public Record Office. A set of plans of the Dutch forts can be ascribed to roughly the middle of the century, both by the style and from what is known of changes in the buildings. The unknown draughtsman appears to have been only slightly less hurried than the Humber's officer. In 1756 a meticulous survey of the English forts was made by Justly Watson (afterwards Lt-Col., Royal Engineers), and his admirably drawn plans and sections appear to have been accurate in virtually every detail. Lt Fisscher's plans of the Dutch forts, 1786, are not strictly to scale, and some of the details seem wrong; he, too, was a naval officer, and presumably could not spend sufficient time at each place. He did not always sign his work but the style is unmistakable. Johan Friedrich Trenks, a bombardier in the Dutch Company's service, must, from his names, have been a German. His signed plans, which are mostly of Elmina, are dated from 1774 to 1791; copies of his handiwork may be recognized in anonymous plans, particularly of 1790-I. These complete a set of all the Dutch
forts. He evidently took careful measurements and drew his plans in full detail, which he represented as intelligibly as his lack of training allowed. In the keys, an inadequate knowledge of Dutch spelling has led to confusion between

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singular and plural terminations; he wrote Commandante or Commandanten (the plural form) to denote a necessarily single individual, but we cannot be certain that his use of Assistenten and Assistenten was always indiscriminate, since there could have been more than one junior officer of Assistant rank in any fort. (Whenever this doubt arises, the singular has been given in the translated keys to the plans reproduced in this book.)

Very few plans of later date are preserved, and the engraved views of the nineteenth century supply little information. But those published in a French naval survey of 1844-5 can be supplemented by contemporary water-colour copies from the same originals and from others by official draughtsmen to the expedition. This set belongs to the National Museum of Ghana, which presented photographs to the Map Room of the British Museum. Most of the earlier plans and views, also, can be studied in the Map Room collection of engravings, reproductions and photostat copies.

PART TWO
ELMINA CASTLE
The Portuguese and, later, Dutch Headquarters
(Pls 7-36)

THE EARLY PORTUGUESE PERIOD (1482-1550/80)
The natural advantages of the site of Elmina must have been apparent to the Portuguese explorers of 1471, and in the ten subsequent years many ships came to lie in the roadstead and trade with the two African communities which were separated by the mouth of a tidal river. In those days the place was therefore called 'The Village of Two Parts.' The present name, Elmina, is an obvious corruption of the Portuguese A Mina, 'The Mine', a term which the discoverers had applied to the coastline for a hundred and fifty miles in each direction, but in later usage became an abbreviation for the great stronghold, the Castle of St George of the Mine.
The site was chosen, in 1482, after careful investigation of the whole coastline by an officer whom the King of Portugal had sent with instructions to build a castle at the most suitable spot. The river cuts off a flat peninsula, which ends in a promontory at the mouth of the bay, where a mass of rocks then stood up - a ready source of material, the quarrying of which would also leave a platform for the building. A beach to the east offered an unequalled landing-place within the calm water of the bay, conveniently close to where ships of 300 tons could anchor (as a map of 1620 noted), while the river on the north-west provided opportunities for careening boats, or even ships of little draught, as well as
forming a natural defence. To the south lay the ocean, and the huge waves which break incessantly against the rocks guaranteed that no enemy could get ashore. The only way of approach by land was along the peninsula, which for a distance of more than a mile westward is never more than a few hundred yards wide, between the open Atlantic and the tidal flats. The sole military disadvantage was the presence of a hill on the opposite side of the river, within cannon-range of the castle site, but no one could then have foreseen that another European power might attack with sufficient force to occupy the surroundings.

The castle has been altered beyond recognition by countless improvements and additions, the work of later Portuguese, of the Dutch and of

ELMINA CASTLE

the British, and no reliable drawing records its appearance before 1600. Earlier maps of Africa are often embellished with illustrations purporting to represent the castle, but these were almost invariably fanciful; only one or two might conceivably have been based on knowledge of the building and they are too vague to be helpful, even if they could be trusted. Yet most of the plan, and a large part of the elevation also, can be restored, by piecing together scraps of evidence obtainable by various means. Study of the actual remains can be supplemented by seventeenth-century drawings, and to a slight extent checked by the Portuguese historical sources, some of which, notably Pina's chronicle (completed in 1504), must have utilized the founder's report. All these data, moreover, conform with the habits of design known to have then prevailed among the Portuguese; they were still building castles of the late medieval type, which had been adapted to carry cannon. By combining the scattered items of information, it becomes evident that the main feature of the building of 1482 was a two-storeyed rectangular block, containing a courtyard, and flanked by towers projecting from two, if not three, corners. A taller tower, probably of the same date but conceivably somewhat later, rose directly above another corner. A huge courtyard extended in front of the rectangular block, to which its enclosing wall formed an outer line of defence. A slightly smaller yard at the back was only weakly fortified. Either in 1482, or soon after, the entire promontory was isolated by a rock-cut ditch probably a double ditch from the first.

The Portuguese expedition, commanded by Diogo da Azambuja, consisted of six hundred men including, according to Pina, a hundred masons and a hundred carpenters (though de Barros, writing about 1550, asserts that there were a hundred artisans and five hundred fighting-men). The ships, says Pina, came laden with timber, stone ready cut and shaped to make 'the gates, windows and rafters of the walls, tower, etc.', a large quantity of ready-mixed lime, tiles and bricks, nails and tools in abundance. The bricks, according to Portuguese usage, would be reserved for coigning and such-like details. A persistent belief that the entire castle arrived prefabricated can only have arisen from misreading the abridged accounts of rather later Portuguese authors. Pina's chronicle implies beyond any question that the masonry in general was intended to consist of local stone; in fact the choice of Elmina, in preference to other sites, was dictated partly
because 'there was much rock' Work began on January 21st, 1482, with quarrying away the tops of some high rocks - in order (as is definitely stated) to obtain building material - and laying the foundations of the rectangular block, which the Portuguese (and their Dutch successors at Elmina)

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called 'the tower'; de Barros names it 'the master tower' or 'the keep' (a torre de menagem). The word defined the shape of the building regardless of size, as, for instance, with the 'Tower of London' or the 'Tower of Belem' outside Lisbon, which was built in 1515-20 and differs from a small castle only by being more compact and unified, though one part runs up as a true tower high above the rest. The size of the 'tower' was so great that virtually the whole labour force could be simultaneously employed on its construction. Azambuja decided to concentrate effort on this portion of the castle, because as soon as the quarrying began, the workmen were attacked by the inhabitants, to whom the tall mass of rock was sacred, and although their fury had soon become appeased by lavish gifts, he could not feel assured that there would be no further trouble, and in that event he could not make full use of his soldiers without fortifications in which his non-combatants might take refuge. By his orders, therefore, 'no other house was marked out or founded, and no foundation laid, until the tower was above one storey high. When it had been built up to this level, the surround of the castle was forthwith begun ... Within twenty days the walls of the fortress were built up to their full height, and so was the tower, and many houses within were finished.' So Pina states, whereas de Barros's version is that 'in twenty days they brought the circuit of the castle to a good height, and the keep to the first floor' Evidently Azambuja had now assured safety by means of outer walls and the structural shell of the rectangular block; thereupon he conferred the name, The Castle of St George of the Mine. After some unspecified interval, throughout which work may have continued at almost comparable speed, he sent the survivors of his force - some had died - back to Portugal, except for sixty men and three women, with whom he remained as Governor. Obviously living quarters for that number must have been already built, together with the huge area of storerooms essential for their maintenance and for trade. No doubt, some arrangements had also been made for storing water, though a spring had been discovered on the site. Very little of the early castle is now visible, and the founder's work cannot readily be distinguished from whatever additions may have been made soon after. The rectangular block has been surrounded by later masonry on three sides, though the original line of its exterior can still be calculated by the curvature of the two remaining towers. The fourth side, which looks on the great courtyard, has been greatly altered; some of the lower rooms may conceivably be original, but the façade and much of the interior were rebuilt by the Dutch. They also made considerable alterations to the walls which surround the central courtyard. Against the south-western of these walls, however, stands a

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down-pipe of Portuguese brick, which discharged rain-water from the roofs into a cistern, lined and vaulted with similar bricks, that underlies most of the courtyard. Since the perimeter of the castle was overlarge to be defended by Azambuja's garrison - even if all sixty of his men had been soldiers, and in good health when an emergency arose - he must have built the rectangular block as a self-sufficient fortress, equipped to stand a siege, and the cistern should therefore date from 1482. It is the only portion of his work which has remained intact, and consequently the oldest European structure in the Tropics. Shortly before it went out of use it became known as Prempeh's Well, because it served the needs of the exiled Asantehene; when still fairly new, its water must have cleansed the persons of Christopher Columbus and Vasco da Gama.

A considerable amount of Azambuja's facing masonry, in local stone, can still be seen in the tower which outflanks the south corner of the rectangular block. His tower was cylindrical, but the Dutch applied a polygonal casing and increased the height (Fig. 8.9,8). One third of the curve of the original exterior remains accessible (though masked by a later wall) beside the ground floor of the rectangular block. The interior is filled solid (and perhaps always was) to a height of more than twenty feet, where the stone floor stands level with the top of the adjoining curtain-walls, which are probably higher than those of 1482. A circle of walls around the floor is partially preserved. As represented on drawings of 1737 and later (Pls 7a, 8, 9), this room on top was narrower than the tower, which had, in fact, been thickened by then; the walls were originally perpendicular all the way up. The conical roof resembled some which still exist on the castle at Feira in Portugal. Another tower projected from the north corner (Fig. 8.13), but is enveloped by later masonry up to a height of more than thirty feet. It, too, is cylindrical, sixteen feet in diameter, and contains two storeys above the solid lower portion. The rooms are now lit by three rows of windows, coigned with Dutch bricks (Pl. 36a); the parapet is an addition in Dutch bricks, and so is the dome (not visible externally), which replaced the conical roof, known from drawings of the seventeenth century (Pls 7a, 8b, 9a, b). The material otherwise is local stone, except for a window-surround of Portuguese bricks (including voussoirs cast from special moulds to form the round arch), which is now covered by the white plaster of the exterior; on the inner side there is no trace of the window in the rubble wall-face (probably a Dutch thickening), but it must have opened just above the stone floor of the lowest room. This window must be the one represented on drawings copied about 1665 from a lost original of 1640-4 (Pl. 8b).

A taller rectangular tower of medieval aspect rose directly above the east corner of the rectangular block; it did not project to either side but only upwards, above the pitched roofs which covered the remainder of the block (Pls 7a, 8a, 8b, 9a). Its own roof must have been almost flat, because it could not be seen, even from a long distance, behind the crenellated parapet. The roof, no doubt, served as a look-out, and that must have been the chief purpose of the
tower; it would have been almost useless for defence except as a control-post. The upper part was destroyed before 1665 and the middle part soon after, but most of the base seems to be preserved, indicating a frontage of roughly thirty feet with an internal width of eleven feet nine inches.’

Neither this rectangular tower, nor the north round tower, projected from the north-east side of the rectangular block, which must therefore have been outflanked by some independent work, now obscured by alterations made in the late Portuguese and Dutch periods. It is, however, certain that the external defences of the castle towards the bay must stand almost on the original alignment, since they are built directly behind a scarped face of rock, which doubles their height and would never have been allowed to project so far as to form more than a narrow shelf; this shelf is actually the edge of a platform which makes the floor of the great courtyard, and must have been levelled to guide the builders of 1482. Otherwise no apparent trace of Azambuja’s design is preserved in the fortifications of the courtyard, and the masonry is all of one build (as could be seen in 1957, when the plaster was stripped off). The curtain-wall is lined with two storeys of later rooms, and where these terminate against the flank of the north bastion there is a single room on a third storey (Fig. 11c.17). It is separated from the rectangular block by a passage (Fig. i i a. 16), which leads straight from the great courtyard and then turns sharply to reach the small internal court - a means of access which, no doubt, goes back to 1482, but changed character when the Dutch converted it into a tunnel. Some piece of fortification must always have stood between the bend of the passage and the riverside service yard; in 1482 this would surely have taken the form of a tower, separate from but linked with both the rectangular block and the curtain beside the beach, and intermediate in height as well as position. The solitary third-storey room is actually the top of a square tower which meets these hypothetical requirements, though the two lower storeys are so nearly buried in later masonry that the tower cannot be recognized as such (Fig. i ia and b.17); at the ground level, however, the construction is evidently suitable for the purpose. 2

Neither drawings nor other evidence establish how many towers existed and have been demolished, but there remain vague indications of two, and it is possible to deduce where three (or perhaps four) more could reasonably have been situated. For military reasons, it is scarcely conceivable that the west corner of the rectangular block was not outflanked by a tower; the plan would then have conformed with the normal Portuguese scheme, in which a tower either projected from or filled every corner. Several more must have projected from the walls of the great outer courtyard. One would certainly have been required at each of the corners towards the open sea. Midway along the landward curtain (Fig. i i a. io) is a rock-cut platform suitable for a semi-circular or polygonal salient of considerable width; a comparable, though smaller, platform (i 3) makes a footing to the virtually cylindrical south tower. The towers at the seaward corners would, most likely, have been three-quarters round and of

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comparable or greater diameter. The curtain along the beach was the longest of all, because it did not meet the rectangular block but extended parallel thereto till it came opposite the middle of the north-east side; there must have been a tower at this end, of which the probable site is masked by an extraordinarily long buttress of later date (Fig. i a.3). On the rest of the beach facade there is no indication that any salient has ever existed, but the rock base may have been cut back, with the result that all traces were destroyed; there was, in fact, space enough for an intermediate tower to stand at a greater distance from its companions than was allowed on the landward side. But fortresses were not designed simply by arithmetic, and the chance of attack from the beach was negligible in comparison. Now that guns of long range could be mounted, an unusually long interval between towers might have been considered satisfactory for one of the safer portions, especially since the castle must have seemed too remote to be besieged in the text-book manner. Besides, the bay is so shallow that no heavily armed vessel could come close, while the approaches to the beach by land were commanded by fortifications on the other sides. Those, too, were fairly well protected by nature; on the south the open sea was never calm enough for a ship's guns to fire accurately, and on the north the river-mouth with its muddy shore discouraged attack.

Towards the west and south-west, however, lay an expanse of almost flat ground (partly occupied by the African town), and here multiple fortifications kept danger at a distance, certainly in the later Portuguese period. Unfortunately the chronicle fails to specify the nature of the landward defences in 1482, and the first mention of a ditch is no earlier than 1510. It occurs in a barely intelligible letter, in which an uneducated Governor protested to the King of Portugal against an order that newly arrived goods must not be sold on board the ships. To hold the trade fair on the open shore, he argues, would be impracticable, and

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to hold it within the castle precincts unsafe because, unless a gate were placed 'in the drawbridge of the ditch', there would be no means of keeping the crowd away from 'the arbour or where the residents are' evidently two distinct areas within the castle. In Portuguese usage, 'arbour' (ramada) meant a shelter of branches, covered with reeds or foliage to give shade - in India boats were so protected. In the present context, a few lines after a statement that no one can stay long in the sun 'without covering', the word seems likely to refer to a hot-weather workshop, principally for the slaves. That its site must have been near the river bank is known from a regulation which insisted that the captain of any newly arrived ship must go ashore in his boat 'straight in front of the arbour'. This area between the rectangular block and the river was enclosed by the Portuguese, though barely fortified; in the Dutch period the whole of it formed the service yard for manual occupations, upon which a large staff of slaves was employed. This practice is likely to have been introduced soon after the foundation of the castle, with the construction of the arbour. The contrasting phrase 'where the residents are' would have been a convenient means of defining jointly both the rectangular block and
the great courtyard; the two composed a unit, because the former could only be entered through the latter. Whether or not the drawbridge occupied precisely its present site, the method of access seems to have been much the same as it is now. That is to say, one route would have led straight ahead from the drawbridge to the great courtyard, while another turned sideways off the bridge, sharply to the left, just inwards of a section which could be raised and lowered, and led to the riverside yard - hence the Governor's point that control of both routes was impossible without a gate on the bridge (where eventually two in succession had to be passed before the walls were reached, but the oldest evidence for either dates from 1639).

These statements are based merely on a chain of inference, and require justification; from old plans we know that there can have been no appreciable change to the entrance system since 1637, and no change whatever since 1774, apart from the substitution of a fixed gangway for a second lifting-section of the bridge (Pls 19, 21a). Any ditch in this area had to be cut in the rock and so could never be obliterated or reduced in size without leaving signs of filling; there are no such signs, rock being exposed everywhere (except where a heap of sand conceals one end, irrelevant to this issue). There are two ditches, side by side (Fig. ixα; Pls 14, 15, 17b, 19, 21a). The outer runs in a straight line from the river bank till it approaches the sea; the inner is shorter, and keeps along the foot of the walls, beginning opposite the west corner of the rectangular block and continuing beside the great courtyard till I09

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near the sea. Between the two ditches stands only a bank of rock, just wide enough to carry a path, which, in one direction, leads to the riverside court. The Dutch enclosed the path between walls, and provided openings for small-arm fire across and down into the ditch (Pl. 21a, b); the fact is relevant, in spite of the late date, because it demonstrates that the outer ditch lay too far from the castle walls to be protected from them alone. If the original intention had been to make this the sole ditch, it would certainly have been cut at a lesser distance. But equally, if the original intention had been to make only the present inner ditch, it would not have stopped where the rectangular block comes to an end but would have continued straight to the river - or else would have turned round the corner of the building to reach the shore of the bay. Evidently the function of the outer ditch was to isolate the whole end of the peninsula, and thereby to enable an insufficient garrison to man the present long perimeter, whereas the inner ditch supplemented the height of the walls as well as barring approach to their base. The two ditches are complementary, and must have been planned in conjunction, though not necessarily cut at the same time. The inner alone would not have impeded an enemy occupation of the riverside and consequently of the beach; the outer ditch must therefore have been started before the inner. But the outer alone would not have safeguarded the walls against escalade, because their height was not enough in itself; augmented by the depth of the inner ditch, it would have exceeded the length of any mobile ladder bamboos had not yet been introduced into West Africa. Together the cuttings constitute one double ditch. Accordingly
'the ditch' mentioned in 1510 need not have comprised only a single cutting, any more than in later times, when the noun was again used in the singular (by Marees and Barbot) in descriptions which incorporate information upon the two separate cuttings. Both must have already existed in 1510, unless the work were still in progress then, twenty-eight years after the foundation of the castle. Because, however, defence would have been scarcely feasible without the double ditch, the whole system may reasonably be ascribed to no later date than 1482. Furthermore, since a ditch would have been useless if no wall or palisade stood behind it, the riverside and great courtyards must also have been enclosed in 1482 - the latter, we may safely assume, by a stone wall of almost the present height. A mud wall remained throughout the Portuguese period around part, at least, of the riverside yard, and the height was insignificant there, whatever the material. It is, of course, impossible to see whether a ditch has been prolonged, widened or deepened after it was first cut into the rock.3 However, the

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present length must be roughly that which was planned from the first; had the intention been to protect a castle of less extent, the inner ditch at least would have turned round the corners of the building. The continuity of the rock sides shows, in fact, that the actual or projected length of both enclosures at that time cannot have been less than at present. True, the seaward end of the inner ditch scarcely overlaps the actual corner of the great courtyard, beyond which there almost certainly stood a room (afterwards obliterated by the south bastion), aligned with others that face up the court, and backed by the curtainwall that returned parallel to the sea. But allowance should be made for a flanking tower, which surely was essential at the corner. In any case, neither ditch could practicably be extended to meet the sea; the shore consists of a tumbled mass of rock which shelves into the waves (Pls 15, 16), and vast effort would have been required to make a trench so deep that determined men could not get past at low tide. Besides, the Portuguese must have wanted to keep open a route for their own use round the seaward end of the castle. Probably they at once mitigated the disadvantages by building a palisade or wall from the end of the outer ditch to the shore, although of this there is no evidence earlier than 1637 (P1. 7a).

The other end of the outer ditch is closed by a wall which must still be largely Portuguese of quite early date, for it contains a large block, carved in the style of the sixteenth century, the function of which is explicable from Dutch sources. A plan of 1637 notes that ships obtained their water from a reservoir formed by that part of the ditch, and a somewhat later copy (Fig. 8.S) dots the course of a conduit from the end wall to the river bank, with the caption: 'Here the boats get water out of the ditch through a hole.' A plan of 1774 refers to the same device as a 'hole for the water to go through', but marks it only by a circle just within the face of the end wall, beside some steps (of Dutch origin) which lead down from the riverside court (Fig. 9.'). Above the lower steps there is actually a circular basin carved into the top of a block resembling a font, the semi-circular front of which projects from the wall (P1. 22b); the pipe through which the water must have flowed is no
longer visible. The basin itself remains in good condition; it keeps its circular
shape as it contracts downwards to a rounded bottom. The originally flat rim has
been greatly worn down, presumably by the contact of buckets as well as by the
trickle of water, but the latter alone must have been responsible for destroying
most of the surface below; at the side, however, the design is fairly well
preserved. The front was shaped rather like a mouth and a bearded chin. It
dropped perpendicularly from the rim to a deep horizontal groove, below which
was

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another perpendicular band of lesser height than that above and probably of less
projection. Then came an inward slant down to the narrowest portion of the block,
followed by an outward swelling carved into a twist, the base of which receded
into the wall beneath, and also curved down from either side to the almost flat
'chin' The boldly carved twist pattern, and the form of the base, are both
characteristic features in Portuguese ornament of the early and mid-sixteenth
century. The site of the contemporary stair is possibly marked by some cuttings
(confused by the remains of a British washing-place or latrine) on the rock shelf
above the sloping edge of the ditch, where the plan of 1637 (Fig. 8) shows steps
evidently descending from the south-east towards the basin. The Dutch stair (Fig. 9.
i) has shortened two narrow platforms or steps, on which the slaves must have
stood to pour in the water.

One further matter to be considered arises from examination of the ditches. The
position of the drawbridge has certainly not been changed since 1637 (or possibly,
on vague evidence, 1602), and it conforms excellently with the requirements of
medieval warfare, being commanded from the near-by tower. The present outer
gateway is a very late Portuguese work, projecting from the line of the walls, but
it occupies a platform of rock which must have been allowed to remain from the
first to serve as a foundation. There may, therefore, have been a previous outer
gate, for which there is one apparent scrap of external evidence, though of such an
unreliable nature that it should probably be disregarded as coincidental: the coat
of arms granted to Azambuja (as carved on his tomb in Portugal, at Montemór o
Velho) represents the rounded front of a tower pierced by a central gateway, and
that plan would fit the shape of the platform. There are, however, indications that
another bridge once existed, or at any rate was contemplated, over at least one
ditch, some sixty feet nearer the sea. Here the inward edge of the inner ditch,
which normally keeps close to the foot of the wall, slants outwards and forms a
sloping buttress of rock, over thirty feet long (Fig. i i a.io). Its purpose is easily
surmised, because another such buttress, though narrower (13), projects beneath
the south tower, safeguarding its base from any collapse of the rock; a larger
tower may be assumed behind the wider buttress. But in the outer ditch, too, a
rock encroachment has been left almost opposite, forming a ledge just below the
top of the bank that separates the ditches. In this instance, the only explanation
which seems plausible is that the ledge was required primarily to support the
timbers of a bridge, although the width is enough to have carried a dozen feet of
woodwork - a width much greater than any comparable bridge. The purpose may
have been to

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support an exceptionally wide, temporary gangway; though a bridge over one
ditch alone could have served no permanent need, it would have been useful while
work was in progress. But there could equally have been bridges over both
ditches; the two platforms are not precisely opposite each other, and the gangways
would therefore have been placed askew, as they are on the existing bridge. It
might therefore be thought that Azambuja placed the entrance here and made it
pass through the supposed large tower; on that supposition the great width of the
ledge in the outer ditch would be explained if a defensive work extended a few
yards either side of the bridge-head. On the other hand, the bridge of 1510 seems
to have been unprotected even by a gate; also the platform of the existing outer
gateway is too near the south tower for a salient to have been required unless it
formed part of the entrance system.
The ditches very possibly have been re-shaped, widened and deepened in the
course of time, partly in order to obtain building stone. The process of amplifying
the castle may have begun as soon as commercial success became apparent - that
is to say, almost immediately. In 1486 the King of Portugal granted his new
dependency the status of a city, a term which should imply that the African town
had not merely been brought under his jurisdiction, but had also been enclosed by
a separate fortification of its own. Whether the defences of the castle were much
changed is very questionable, but probably the interior was greatly improved and
augmented in the following years to accommodate an increasing volume of trade.
No details, however, are known; Pereira, writing about 1568, merely records
that John II (1481-95) 'ascertained the necessity of ordering much more work to
be done', while a date, 1484, is said to have remained perfectly legible nearly two
hundred years later, carved over the doorway of a storeroom. Presumably most of
the additions were placed in the great courtyard; the riverside yard contained
virtually no permanent buildings, even in 1637, and the rectangular block must
surely have been unalterable except by raising the height. (Some work of that kind
may have been undertaken, but, if so, it can no longer be recognized.) A solitary
hint of ornament is given by a Dutch statement published in 1668, that an illegible
inscription in the inner courtyard was placed 'between two old pillars'.
One early building (which tradition in 1682 attributed to John II) is known to have
stood outside the castle; this was the Church of St George, demolished in 1596. It
must have been intended to serve the needs of converts in the African town as
well as of the Portuguese and their slaves (who, no doubt, suffered baptism
immediately after purchase). The site lay well beyond the outer ditch, and fairly
near the 113

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sea, if we may believe an absurd engraving of 1668 which claims to show the
castle of the Portuguese period; since the foundations may have remained visible,
the position might conceivably have been indicated with some approach to
accuracy, though the church itself is represented in an absolutely incongruous style of architecture. (No trust can be placed in de Marree's statement that some of the masonry could be seen as late as 1802, when the townspeople were fast taking away the stone to build houses for themselves; he may have seen the ruins of some later structure.)

1 The rectangular tower is recorded by the two drawings of 1637 (Pls 7a, 8a), one (by a Dutch sailor) of uncertain but probably early date, another sailor's drawing of 1640 (Pl. 9a), and Vingboon copies from three lost drawings of various dates. The parapet is inconsistently represented. The number of merlons on the south-east side (facing the great courtyard) and on the north-west varies from five, on both the drawings of 1637 and on the sketch of 1640, to four or three later; since, however, both the sketch of 1640 and the drawing with three merlons suggest that the south-east corner had fallen away, the numbers they imply should perhaps be corrected to six and four respectively. The shape of the merlons is usually given as rectangular, but on drawings of 1637 (Pl. 8a) and 1640-4 (Pl. 8b) they appear notched like a swallow-tail - an Italian decorative convention of the late Middle Ages, useless for defence. Another of Vingboon's copyists made them triangular, merely to save himself trouble, while on an extraordinarily incompetent sketch (which may be the earliest of all), they are carelessly rounded. This drawing, from the south, is the only one which shows two sides of the tower at once; the south-west face looks much narrower than the south-east, but allowance should be made for foreshortening.

On such unreliable evidence no firm conclusions should be formed, though the number of merlons may indicate that the south-east face can scarcely have measured less than 20 ft. or more than 30 ft., while if, as the drawings hint, it stretched across roughly half the width of the courtyard, it should equally have come within those limits, at some such figure as 28 ft. Actual remains, however, still help to define the area of the tower, although the highest portion had been removed before a survey of 1665; it must have been demolished to the level of the present second floor. Below, there are only three walls of the requisite thickness to support a tower of exceptional height, a point upon which all the drawings agree, though varying as to how tall it actually was. Two of these walls form the exterior of the rectangular block, but the third partitions it lengthwise, separating the room behind the court façade from an inner room. The width of the outer room, 11 ft. 9 in., should therefore conform with the internal measurement of the tower from front to back. The present length of the room, 27 ft., need only approximate to the original internal length, because the south-west wall is a mere screen on either side of a doorway too wide to have formed the entrance to the tower; this must be a Dutch wall, built to carry only its own weight. The thick back wall ends close by, but may have been cut short by the Dutch; it therefore determines only a minimum inner length, of roughly 24 ft. The back wall might conceivably have been inserted after the completion of the rectangular block, but is far more likely to have formed part of the original structure of 1482.

2 The walls became thinner as they rose, and the highest room was therefore the largest; it measures 17½ by 17 ft. Lower down, the exterior of one wall would still be seen if the Dutch had not re-faced it with brick when they vaulted the passage.
to the inner courtyard. The north bastion has been added against another wall, and
the space between a third side and the curtain is filled solid; the fourth wall is in
effect a partition between the tower and the rooms along the great courtyard. But
on a drawing of 1637 (P1. 8a), which gives the earliest representation of the
tower, it is seen rising high above the rooms of that date; they were afterwards
reconstructed with two storeys, the lower very tall and vaulted. The secondstorey
room in the tower is also lined and vaulted with Dutch bricks, which must have

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it slightly smaller than before, when a wooden ceiling may be assumed. The
lowest room is still smaller, because of the massive stone walls which carry the
vault of Dutch bricks; to a large extent the original masonry seems to have been
preserved, in spite of repeated alterations. The entrance archway (at the east
corner) is lined with Dutch bricks like the whole room beyond - the first room
beside the great courtyard. The inward wall alone has apparently been rebuilt, at
some remote period; it is a rough patchwork of stone and bits of brick. Near the
top of the west corner, the British led a drain (Fig. i i a.2) from the inner courtyard
through an older doorway, bringing the water down by an open conduit, supported
by an unnecessarily large and solid base, of Dutch bricks, which looks as though
it might once have been a staircase; the floor (of rock) lies so far below the
passage to the inner courtyard that an entrance could as easily have been made at
the second storey. In the adjoining wall is a doorway, coigned in Portuguese
brick, to the interior of the bastion, which was built late in the sixteenth century;
the doorway must have been inserted at the same time. For there is no reason
whatever to think that the original tower included a second room on the site now
occupied by the bastion. The tower at its present dimensions would have met all
needs of defence, provided it were linked with the curtain and the rectangular
block, which stand a few feet away on either side. The latter gap must have been
closed immediately beyond the bend by which the passage from the great
courtyard turns towards the inner courtyard. Possibly the barrier took the form of
a gateway communicating with the riverside court, either directly or through a
second gateway beyond; the plan of 1637 suggests the latter method, but may also
be interpreted quite differently.

3 There is evidence that someone over-estimated the width of the outer ditch
before its completion; temporary steps for the workmen's use must have been
sited too far out so that the ends were left encroaching into the edge of the cutting,
just beside the entrance to the drawbridge (Fig. i i a. i 1). There were two complete
rock-cut stairs to the floor of the ditch, one commanded by the round tower, the
other by the salient at the seaward end (now a bastion).

THE LATER PORTUGUESE PERIOD
(1550/80-i637)
T HE Renaissance style of fortification spread from Italy throughout
Europe before the middle of the sixteenth century, by which time the new
principles of defence had crystallized into set patterns of design. A generation
earlier, the Portuguese seem to have been sufficiently influenced by the Italian innovations to develop a style of their own, but it retained a semi-medieval appearance; the best-known example, the Tower of Belém, was built in 1515-20, and may be described as a gun-platform disguised as a traditional castle. The contemporary or slightly later fortress of Ormuz, in the Persian Gulf, was outflanked, like the original Elmina Castle, by rounded towers on the corners and intermediately along the curtains, and here, too, one taller tower stood within. Old drawings of other Portuguese fortifications around the Indian Ocean convey a similarly medieval impression, well into the latter half of the century. But in 1546 an outwork of pure Renaissance style was built at Diu, in India; there was nothing to distinguish it from an Italian fortification. However, Portugal seems to have felt no confidence in its own engineers; in 1580 a rather undistinguished Italian, Filippo Terzi, was engaged to modernize the royal fortifications, both of the home country and of the North African possessions. Perhaps the reconstruction of Elmina may have been postponed till then, at least in part, on the argument that the remote position diminished the risk of serious attack, but the medieval walls must have been so vulnerable to the heavy cannon of contemporary warships that any longer delay is inconceivable. Renaissance influence may have caused slight modifications before 1550, and almost certainly a thorough transformation of the exterior was completed within the following thirty years.

In the main, the original lay-out was retained, though the fortifications were altered. The walls of the rectangular block were thickened, presumably on the outside only, so as to avoid interference with the rooms inside; new masonry was also added around the tower at the south corner, and along the sides, and bastions were built at the west.

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and north corners. The walls surrounding the great courtyard must have been strengthened by additional masonry (probably both outwardly and inwardly), the corners which overlooked the open sea were covered by bastions, and any towers that had existed at other points were demolished. The curtain parapets, no doubt, already contained slits for small-arms fire as close together as possible, though these are first known from a view engraved in 1704 and are carefully represented on a plan ascribed to 1786. The church outside the castle was recognized as too dangerous a liability; an enemy force might seize it, and thereby obtain a ready-made stronghold within close range. So, in 1596, the same year as the first Dutch attempt to capture Elmina, the old church was demolished, a couple of years before the completion of its successor, which is the building that projects into the middle of the great courtyard from the seaward end (Figs 8.3, 11a.7; Pl. 25). Although greatly altered, it retains the four upright bands of Portuguese bricks which diversified the entrance façade, but to different effect owing to the destruction of an equally tall but narrow porch. The increasing threat of Dutch conquest seems also to have inspired further improvements in the fortifications, especially, perhaps, after the very serious attempt (involving three attacks) in 1625.
The oldest known evidence for the changed appearance comes in a book of 1602 by Pieter de Marees, whose Dutch nationality barred him from entering the castle. However, he supplemented his own observation of the exterior (in 1601) by making inquiries from men who had been imprisoned inside. By his account there were four bastions, and the two towards the sea (i.e. at the north and east corners) were stronger than those on the landward side (i.e. at the south and west). That was not the case in 1637, when a plan represents the north bastion (Fig. 8.14) as much larger than today (Fig. i ia and b.18) and the others at approximately their present size. The western is now conspicuously the largest (and, though that may not have been true till the Dutch raised it, the tallest), the eastern and southern appear to be twins but the former is actually rather larger, while the northern (which must roughly have equalled those two in height before it was raised by the Dutch) remains longer than the eastern on the more visible face, which in 1637 was still longer, though not comparable with the west bastion; the other face, which Marees himself is unlikely to have seen clearly, was already shorter than any other in 1637 and has since been cut back. Marees's one glaring discrepancy, therefore, concerns the west bastion; in 1637, instead of being the smallest, it was far the largest.

Assuming him to have been reliable to some degree - and because this particular matter was then of profound interest to his countrymen, 117

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he must have done his best to find out - it would seem that the Portuguese enlarged the western bastion some time after his visit in 1601, and that is very plausible, because in 1637 it evidently comprised work of two distinct periods. The other bastions may have remained unaltered in 1637, although none retains the Portuguese exterior today. The eastern and the southern appear at roughly their present size in views of 1647 and about 1682, but must actually have been somewhat smaller, because the latter represents them propped by a series of buttresses which were afterwards obliterated; a still later alteration, of 1782 (Fig. io), concealed the flanks of both bastions behind a thickening of the intervening curtain. The northern bastion is recorded to have been 'renewed' by the Dutch in 1640-4, and the reduction in its size must have been effected on that occasion. Drawings (P1. 8b) show the work in progress, and very thoroughgoing it looks, but it cannot have appreciably changed the alignment beside the beach or towards the great courtyard. For, unlike the other bastions, this one is hollow, and the interior, which remains accessible, retains archways of Portuguese bricks in those two walls; the bricks show no sign of having been re-used, and however many the Dutch may have found available, there can hardly have been unused voussoirs of these special sizes. One of the archways (under a fanlight covered by a brick relieving arch) forms the entrance from the basement of the three-storeyed square tower to the interior of the bastion, the other opens through the outer wall some twenty feet above the beach (Fig. i 1 a. 1). The width of this doorway has been reduced, fairly recently, with cement, leaving a slit only wide enough for a man to squeeze through; here, according to popular belief, slaves were lowered to the beach to be put on board ship. In reality it was an entrance for goods, which were
hoisted on a rope by a crane and windlass placed on top of the bastion; the crane is shown on a 'map' (P. 10), copied from a lost original allegedly of 1665, and a visitor of 1682 refers to lifting goods from the beach 'by cranes or tackles'. That this seamanly device was invented by the Portuguese cannot be definitely ascertained, but they are hardly likely to have hauled the goods up by hand. According to Marees, the lesser of the castle's two gates, that on the 'east' side, was provided for unloading ships and barges. His 'east' must be corrected to 'north', if we are to make sense of his assertions (clearly due to misunderstanding his informants) that the castle ditch on that side was deeper and served as the barge harbour, retaining at its driest not less than six feet of water; all this applies obviously to the tidal river-mouth (where, in 1625, the Portuguese kept galleys as well as small craft). Allowing, then, for the wrong orientation, the minor gate should have been fairly near the river, though it must have communicated directly with the beach. Just as Dapper (in 1668) called the hoist entrance a 'water gate', Marees could have taken his own hearsay information to apply entirely to it, though he may actually have been told also of a small but normal gateway, whereby the occupants of the castle went between the riverside yard and the beach. This gateway is certainly Portuguese by origin, since it appears in the plan of 1637 (Fig. 8, between 14 and 22); a short wooden stair now leads down from it to the beach, but has, no doubt, replaced a ladder, which would have been kept inside except when needed. By using this doorway instead of going round the exterior of the castle, the journey from the beach to the great courtyard is considerably shortened, but involves walking a distance of some three hundred and twenty feet within the walls. If, as is conceivable, the Portuguese had a more direct route, passing east of the rectangular block, it is likely to have been awkward for heavily laden carriers. For bulky goods especially, the method of hoisting them to the interior or top of the north bastion saved a prodigious amount of time and labour on shore, thereby enabling the turn-round of ships to be accelerated; at seasons of frequent rain the unloading of perishable cargo would otherwise have been most wastefully prolonged, and the crews might have become incapacitated by fevers. The advantages are so immense that the bastion-archway is likely to have replaced some earlier means of achieving the same result; indeed, Dapper's confused account (1668) seems to imply that in 1637 a blocked gateway to the beach remained visible in the side of the bastion, which may there have incorporated part of an older structure.

The main gate, says Marees, was fortified with a drawbridge and a white turret containing the Governor's rooms - obviously meaning the south tower, which then, however, provided only one small room; the Governor may also have occupied the adjoining part of the rectangular block, which was so used early in the Dutch period. The white surface must have been due to lime-wash, the use of which is here first recorded; under the Dutch it became general throughout the castle.
Marees describes the walls beside the sea - evidently meaning the bay - as of no great height in themselves, because the rock beneath raised them sufficiently; in fact, a great deal of scarped rock is exposed, and some of the masonry is likely to be only a facing to rock. The wall to landward, he says, was high though not solid. The best and largest guns were placed towards the sea, but many stood out of sight in casemates - for which no other evidence is known. He also mentions the great courtyard - as a quadrangle, containing the 'recently built' church - and offers a hint that, in spite of its extent, little accommodation was available, since most of the Portuguese lived outside in the African town, when not on guard duty.

The Portuguese continued to hold the castle for thirty-five more years, during which the earliest genuine views were drawn, all from ships and, with one exception, by incompetent amateurs. The exception (Pl. 7a) is by Frans Post, who specialized in topographical scenes; he must have drawn it early in 1637, on his way from Holland to Brazil, where he arrived in time to paint a landscape in March. The latest sketch to show the castle under the Portuguese flag (Pl. 8a) was drawn in August of that year, while the Dutch were attacking the castle by land and sea; across the foreground (omitted in the reproduction) are seen twelve large and seven small Dutch ships, a number which is incongruous with attempts in 1596 and 1625, but precisely corresponds with narratives of the successful attack in 1637 (though not with contemporary documents, which clearly give incomplete data). That the drawing accurately recorded the ships engaged in one particular phase of the battle may be presumed because Hans Propheet, who drew it - and, eight years earlier, Mouri (Pl. 57) - took a professional interest in shipping; he drew the fleet quite well, whereas he had no idea how to represent a building.

The western bastion stood, in 1637, only to about the same height as the adjoining southward curtain-wall, which a previous generation must have built to thicken the side of the rectangular block and to provide a wall-walk to the bastion. This curtain, at the other end, encased the front of the round south tower, making a polygon of four external facets (Fig. 8.8); in plan the shape was much the same, and may have been precisely the same, as that of the existing polygonal tower, which, however, is twice as high. The Portuguese casing was no taller than the curtain and left the upper room on the old round tower still exposed (Pls 8a, 9). At the back, according to the drawings of 1637, could be seen the gabled roofs and attic windows of the rectangular block, which stood to roughly the present height on both the northwest and the south-west sides, and along the southern part of the south-east side. Above the remainder of the south-east side rose the rectangular tower of medieval aspect. Behind it, the square tower is mistakenly drawn (Pls 7a, 8a) as though it were attached to the rectangular block. Above the sides of the great courtyard separate buildings are shown, all with gabled roofs. On the August sketch the most conspicuous is drawn as though it were above the gateway, and a view of 1640 (Pl. 9a) gives it as beginning at the rectangular block and ending just beyond the gateway; existing remains prove that to be correct. The smallest building in the court on Pl. 8a must represent a room near
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the seaward end of that side, presumably on the south bastion; here the armourer lived in 1639-40. A long building backed the seaward curtain, filling the space between the south and east bastions; the upper floor was used in 1640 as a night guardroom, and the Portuguese probably built it for that purpose. A much longer, two-storeyed building extended from the east bastion to opposite the east corner of the rectangular block; at that end there is still a relic of it, a window-surround, flat-arched in Portuguese brick (now concealed behind the plaster, under a wooden staircase). The drawing of 1640 and the Vingboon set add the further information that a rather low, though probably likewise two-storeyed building extended the full length of the landward curtain; the upper floor may, of course, have been early Dutch work. Every visible roof throughout the castle is represented as tiled.

The entrance system of late Portuguese times is only partially known, because the plan of 1637 omits the details. A chalk drawing (Pl. 9a), made by a Dutch skipper in February 1640, shows, though vaguely, two external gateways. The inner of these still exists and is unquestionably late Portuguese, although the Dutch emblem of the lion is carved above the rusticated arch, on a shield which must have been inserted to replace an earlier coat of arms; the scrolls on either side are almost identical with a pair at Damdo in India, over the entrance of Fort St Jerome, dated by an inscription to 1614. The gateway projects in front of the curtain; on the inward side (Pl. 23a) a thick bolt of timber could be placed across the door, by being pushed into a deep hole in one jamb and dropped into a slot in the other. A small lobby behind the gateway ends at a similarly equipped gateway of Dutch bricks, which is apparently aligned with the medieval back of the curtain-wall and therefore may occupy the site of an earlier gate; a wide guardroom beyond may also conform with the Portuguese arrangement, but the third archway, which opens from it to the great courtyard, is wholly Dutch. The guardroom is covered by the wooden floor of a room above, into which the portcullis (still used in 1682) was hoisted. The upper storey is known, from drawings, to have been built by the Portuguese; although afterwards reconstructed by the Dutch, its frontage can still be traced by a rebate in the courtyard stretching from the rectangular block to just beyond the guardroom (Pl. 23b). Externally, however, most of the space above the lobby seems to have been left open, forming an outward extension of the wall-walk. Here a low oval gun-port (Pl. 2ob) faces the bridge, and another, on the flank of the salient, commands the exterior of the curtain in the seaward direction. No doubt the main, if not the sole, object the Portuguese had in mind when they built the lobby and gateway was to mount light cannon on the roof. This addition must have been one of their latest works, dating within some twenty years of their expulsion.

There were drawbridges across both ditches in 1639 and we may reasonably suppose both to have been relics of the Portuguese occupation; a crude ‘map’ of...
1620 shows the outer alone, hump-backed in form. A gateway that stood at the far end of the outer bridge was unquestionably Portuguese work, though it is known only from the drawing of 1640 (Pl. 9a); the plain rectangular frame of the arch, and the battlemented top, suggest quite an early date. The gateway evidently interrupted the course of a fence, which began only a few paces to one side of it, but on the other ran all the way to the sea; in fact, it presented an obstacle along the shallower part of the outer ditch, and went on to close the gap beyond, as Post shows (Pl. 7a). It must have been a stronger barrier than the drawing of 1640 suggests; the fall of the ‘palisade from the gate to the sea’ is mentioned in a Dutch Governor's diary (on July 4th, 1645). The drawing leaves no doubt that the gateway, too, stood outside the outer ditch, and so could have had no value for defence, because in times of danger the drawbridge immediately behind would have been lifted; the sole purpose must have been to control entry into the castle when the bridge was down. This need had been stated in 1510, and the gateway represented in 1640 might well have been a work of some such date. The drawing also shows the bank of rock which separates the outer and inner ditches, and is now enclosed by walls on each side; it was then bare.

The Portuguese surrendered the castle on August 28th or 29th, 1637; on September 5th Commersteyn, a Dutch engineer, completed the oldest known plan (Fig. 8). An engraved version was published in 1647, and a manuscript copy was re-copied, twenty to thirty years later, for the Eugen ‘Atlas'; apart from a few accidental or intentional discrepancies, both are as nearly identical with Commersteyn's original as could be expected of free-hand duplicates. But the Eugen copy includes the environs, and also bears a key - obviously compiled not earlier than 1645 - which itemizes twenty-five portions of the castle, whereas the original merely designates the cisterns, and notes that ships obtained water from the riverside end of the outer ditch. The plan makes it quite plain that the Portuguese lay-out has remained to this day substantially unchanged, except for the addition of buildings in the riverside yard then almost empty - a re-shaping (in 1640-4) of the north bastion, which had probably been damaged in the siege, and a widening (in 1782) of the short seaward curtain. Minor differences are, to some extent, open to question, because the plan was not perfectly to scale, and in parts must have been wrongly drawn. Commersteyn may have been partly occupied with the engineer's duties of preparing schemes for the repair of damage, and, if so, a week could scarcely have allowed him enough time to survey such a complex assemblage of buildings, considering the inadequacy of the available instruments; evidently, too, his finished plan (or this particular ‘fair copy' of it) was not checked by comparison with the actual buildings. One of his demonstrable inaccuracies is in placing the porch of the church much too close to the rectangular block. That error may have caused another at the back of the church. Instead of being detached, the existing building actually meets the wall of the courtyard, to which it cannot have been afterwards extended, because the proportions on the plan are in any case too narrow; perhaps, however, the rooms across the end of the courtyard may have since been widened and so have
filled the gap. Another uncorroborated feature is an abrupt expansion of the church, as though to contain a side chapel, where in later times there was only an external staircase (probably wooden). There is no reason for doubting the other conspicuous divergencies from the present state inside the castle: the wide, straight flight of steps instead of the existing double staircase to the rectangular block, and the oblong shape of the little internal court, which almost certainly was squared off later by an encroachment along the south-east side. One of the original rooms here formed the powder magazine, according to the key written on the later version of the plan, but it was not converted to that purpose till April 28th, 1645, as an entry in the Governor's diary reveals; the key must therefore be later than that date. All the rooms which lined the great courtyard are designated as soldiers' lodgings.

The north bastion in 1637 was very much larger than at present, and quite differently shaped. According to the plan (Fig. 8.14), the outward face continued for twice its present length, till near the gateway which still allows access between the riverside yard and the beach. The next facet, a very short one, slanted still farther into the yard, leaving a reentrant space behind the curtain, and here an opening is shown in the bastion. Since the plan habitually changes from one level to another, there is no visible means of deciding whether this represents a gap in the parapet, a doorway at half the height of the bastion to lead to the room within, or even a tunnel through the solid base. But the second explanation is incompatible with the recorded fact that the bastion contained the powder magazine, a room which was almost pitch-dark. A gap in the parapet is the obvious explanation, in spite of the omission of the stair which would have been needed for communication with the court - probably it was wooden, and removable (like the stair which unquestionably was provided at the gate of the riverside yard, but 123

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equal is not marked). The adjoining face of the bastion slanted back to the north round tower, and was roughly as long as the present outward face; it must have been intended to carry guns, and the angle gave full command of the riverside yard. After touching the tower, the inward side of the bastion seems to have curved away from the rectangular block and then run straight till it turned outwards beside the square tower (at the end of the rooms that lined the curtain of the great courtyard). The gap between the bastion and the rectangular block appears to have included a continuation of the passage which leads from the great courtyard and now goes only into the little inner court; perhaps a hypothetical medieval gateway to the riverside court had been retained. The passage is crossed on Commersteyn's plan by two lines, which might indicate walls, but no doorway is shown in either, nor in the horn of the bastion beside the tower; maybe they were not walls but the edges of a bridge between the rectangular block and the bastion. The later version of the plan omits both lines, and the accompanying key ignores the whole matter; probably the bastion had already been extended across the gap.
The defences of 1637 included several works for which there is no evidence earlier than the plan, though some of them must already have attained a respectable antiquity. The curtain-wall between the medieval north tower and the west bastion was no longer formed by the original exterior of the rectangular block but by a thickening, which then can scarcely have been less than fifty years old (and was soon covered by a second, Dutch, thickening). It is likely to have stood already to roughly its present height, and may have been covered in, to judge from Hemmersam's account of 1639-45 and from a drawing, copied for Vingboon, which also shows the reconstruction of the north bastion in 1640-4 (Pl. 8b). On this drawing, the west bastion (which was raised in 1646) is represented as being of equal height, and with a cylindrical sentry-shelter on the apex - a detail confirmed by the sea-captain of 1640 (Pl. 9a); another of the drawings copied for Vingboon (Pl. 9b) represented both it and a similar shelter on the south bastion, and the type is, in fact, characteristic of Portuguese work. The shape of the bastion is incorrectly drawn on the Vingboon copies. The plan of 1637 shows most clearly that the face towards the riverside yard consisted of two distinct parts, though the fact has since been obscured by two successive Dutch works which cover the junction with the north-west curtain of late Portuguese times. At this end the bastion obviously incorporates a relic of the one which Marées described in 1602 as being smaller than the north and east bastions. The Portuguese must have afterwards enlarged it by building a new frontage on the south and west, 124

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so far outside the previous frontage that the intervening space was filled with earth (as is obvious from the recorded fact that the pavement had subsided most unevenly by 1646). The new masonry also overlapped the former apex but left most of the old north-west face exposed, although recessed out of alignment (Figs 8.12, 9, ii). In the enlarged bastion, therefore, the north-west face does not slant uniformly in the normal manner but bends at the middle, and the portions to either side of the bend slant at slightly different angles. The masonry is obviously due to one programme from the bend to the apex and along the southwest face, whereas the recessed portion appears to have been built independently, though in similar style. (The masonry is now concealed behind whitened plaster, but these observations were made in 1957, when the whole bastion was stripped of decayed plaster - the accumulation of centuries.) The jointing is most irregular owing to the use of blocks which vary greatly in size and shape; the apex alone is not built in this manner but of exceptionally large blocks, including some of remarkable length, which are neatly shaped to form a gentle curve instead of a sharp corner. The short south-east flank, by which the bastion, after its enlargement, returned towards the rectangular block, stands above a rock face that constitutes the end of the inner ditch. The Portuguese must have built out the adjoining curtain-wall to the edge of the ditch in order to join up with the original bastion, and its alignment, therefore, gives a clue to the shape before enlargement. In 1637 a gateway filled the gap between the south-east flank and the outer ditch.
Between the ditches and the sea, the plan of 1637 marks some works whereby the Portuguese hoped to forestall any attempt to by-pass the ditches. But in addition the hand-drawn plan includes two walls that never existed, and were rightly omitted by the later copyists; Commersteyn probably invented them in an attempt to make sense of incompatible measurements, for the divergent angles in this area must have been particularly baffling. The outer ditch is marked as extending several paces beyond the present ending, through the site now occupied by a walled platform composed, it is believed, almost entirely of rock. (Admittedly, however, it is traversed by a drain, probably of about 1800, leading from the inner ditch to the shore, and the sand now heaped across the end of the outer ditch, behind the butts of a riferange, may conceal masonry instead of rock down to the base of the cross-wall.) Towards the sea (P1. 7), the platform abuts against a higher battery which commands the approach along the shore; in 1637 it may have been a comparatively recent addition. The platform site and the battery both adjoined, according to Commersteyn, a more extensive enclosure which separated them from the south bastion, whereas actually they meet the bastion, and they must have done so at that date, because the bastion projects on the plan precisely as it does now - the corner stands where the end of the inner ditch runs to a point at the centre, and this feature is drawn correctly. The barrier marked as running to the sea from the inward corner of the battery - a position which should really mean that it led off the apex of the bastion - must have been the palisade; a double palisade seems to be indicated on the engraved plan, prolonging the lines of both ends of the battery. A gateway is marked in the single barrier of Commersteyn's plan, some paces away towards the sea; the line drawn behind is not corroborated by the views, and was omitted by the copyist.

The name 'French Battery' has in recent times been mistakenly applied to the work just described, between the outer ditch and the sea, but was formerly applied to one at the diametrically opposite corner of the castle, in the riverside court (Figs 8.22, 9). The straight curtainwalls beside the river and the beach are linked by a polygonal salient of the same height, filled solid up to the battery platform, which has retained the shape and appearance known from the 1637 plan and the drawing of 1640-4 (P1. 7b); it must consist largely of earth inside, otherwise it would not have been used for a burial (recorded in the Governor's diary, May 8th, 1646). The name, which appears on the later copy of the 1637 plan, originated when the Dutch were making repairs, probably after their bombardment, and found something which they interpreted as evidence that the original builders were French. The idea seemed plausible because of a legend, published in 1624, that the French had established a trading-house at Elmina before the Portuguese. A Dutch account published in 1668 alleges that the evidence took the form of an inscription, imperfectly preserved but containing the figures '13', which were thought to be the beginning of a date in the thirteen hundreds - before arabic numerals had come into use! This absurd notion aided French claims which asserted, with a wealth of fictitious detail, that sailors from Dieppe had reached
the coast long before the Portuguese, and founded the castle in 1383. Actually the shape of the battery and the inconsiderable height prove that it cannot be older than the last quarter of the sixteenth century, at which time the castle held many French prisoners, who may have scratched inscriptions on the walls. At one end of the battery, where it overlooks the gateway from the court to the beach, stood a small building - its gabled roof may be seen on the view of 1637 (Pl. 7a) - which was probably a magazine for the powder used when salutes were fired; some iron guns (the only ones of that metal in the whole castle) were mounted here 126

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for that purpose by 1645, and no doubt the Portuguese had initiated the practice. The back of the battery overlooked a large open space, under which lay a huge cistern (which the Dutch rebuilt). On the far side, next the ditch, the plan shows the only other building in the riverside court; it is drawn as consisting of one small room in a square enclosure, which is otherwise dotted all over - a conventional manner of indicating planted ground. This was a burial ground; the information is no older than 1639, but must apply to Portuguese times, because there can have been no space left for more graves before the epidemic of 1645-6, when the dead were buried elsewhere in the yard and in the great court. A variant of the 1637 plan, engraved in 1647, identifies the room as a chapel, and the drawing of 1640 (Pl. 9a) shows it as quite a handsome little building with a gabled roof. Steps beside the southern corner led down to the reservoir in the outer ditch, next to the basin from which water could be piped to ships' boats. Much information about the Portuguese castle was published in 1668 by Dapper, who evidently compiled it from sources of various dates and unequal value. Probably some Dutchman, after witnessing a piece of repair work, supplied a statement that the Portuguese walls consisted of an earth fill enclosed by masonry of local stone; this is likely to have been true of the solid bastions to earlier curtains, but cannot have applied to every other wall. There were two cisterns - one in the riverside yard (Pl. 22c), which consists of Dutch brick, probably as a result of reconstruction after the bombardment of 1637, the other in the castle proper (in fact, under the inner courtyard); together they held six months' supply of water for two hundred men. All the rain which fell on the two large open spaces and on the soldiers' lodgings was conducted into the reservoir which occupied half of the outer ditch; this statement may refer to the Dutch period, but could apply equally well to the Portuguese. Dapper's general account of the castle is unmistakably quoted from Marees, hence his ignorance of the fact that the west bastion had subsequently been enlarged by the Portuguese. He failed to realize that one of two 'seaward' bastions, described by Marees as stronger than those to landward, was actually the north bastion, which also pointed towards the hill of St Jago. Upon these two misconceptions he based the criticism that the Portuguese had fortified the castle in the wrong direction - against attack by sea instead of by land. In fact, the north bastion in its Portuguese form had been directed against St Jago and the bay, and projected so far towards the riverside as to enable it and the west bastion to support one another by mutual covering fire. Opposite St Jago, he
states, the Portuguese had two lodgings on the site used by the Dutch for 'a battery without shoulders' - obviously referring

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to the low battery which they built to replace the projecting part of the north bastion (Fig. 9, above 13 and 14). 'On this side the Portuguese castle was unfinished and walled only in mud' - presumably along the river and perhaps beside the ditch too; there was 'only one battery, mounting six mortars, and on the one side there usually stood only two small cannon above an old blocked-up gate'
The same information recurs on another page, where the wording is amplified into 'on the one side, that of the north-east' Dapper, it must be remembered, had not visited Elmina, and perhaps failed to understand his source; if the mortars and the cannon stood on different faces of a single work, as seems to be the meaning, the statement might conceivably apply either to the so-called French battery or to the north bastion (since, in Dutch, bastions too were usually called batteries). The latter, however, was the more suitable position for mortars, because of the great height, which would have been essential to command the bay and also compensated for a longer distance from the river. The blocked gateway, in that case, would once have given access to the beach, probably before the bastion existed.

Dapper's further criticism, that communication was difficult between one part of the castle and another, is fully corroborated by all that is known of the early Dutch castle. The medieval central structure was, in fact, too tall for its later adjuncts, most of which could not be reached, one from the other, without going down and up staircases and through halls or covered passages. When the Portuguese were confronted by an enemy in overwhelming numbers, as happened in 1637, their inability to reinforce any weak point without delay may have been a major factor in their decision to surrender.

When the Dutch took possession of the castle, it was armed with thirty brass guns. A few small cannon must have stood in the two outer batteries (at the corner of the riverside court, and by the end of the outer ditch) or have commanded the entrance; the heavier cannon and the mortars we may suppose to have been somewhat unevenly distributed among the four bastions, each of which could easily have mounted half a dozen pieces of the largest calibre. The Dutch apparently considered the armament quite adequate; eight years later, indeed, they had reduced the number of brass guns to twenty-one.

The copy of the 1637 plan includes the environs, and this is the only authority for another 'battery which the Portuguese had' far outside the castle - on the river bank, towards the west end of the town. No other fortifications are shown round the town, though an oblong building at the west end (in the middle of the peninsula) is described as the gateway; the wall itself must have been omitted through sheer carelessness.

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The Portuguese 'map' of 1620 gives a schematic elevation of these defences; the 'wall' - it is so labelled - is shown with a walk on top, and the 'gate of the city with its tower' appears as an archway of equal height beneath a parapet about half as high. Two later representations, which add more detail, occur on the engraved plan of 1647, and on the bird's-eye 'map', which claims to be based on a survey of 1665; the former also shows a thin wall (or more likely a palisade) beginning at either end of the castle ditch, and surrounding the whole town, while the latter (P1. 8b) restricts defences to the west end (shown over five hundred feet from the castle), where alone is their existence mentioned with reference to the Dutch attack in 1625 and in Dapper's account (published in 1668). All these sources agree that there (at the west end) a wall ran across the whole peninsula, between the river and the sea. It is shown as composed mainly of straight sections, but these are discrepantly represented. According to the engraving, one section passed immediately behind a group of water-tanks, which can be identified with some huge pits, quarried deep in the rock, almost half a mile from the castle; Dapper, no doubt, was correct in saying that they were intended partly as obstacles. The gateway was placed slightly nearer the sea; it opened through or beside a tower, which is seen sideways in the 'map' (P1. 8b). Behind the seaward end of the wall, the engraving marks a battery, in the shape of a redoubt, and this may be one of which the Dutch heard when planning their attack in 1625; the battery which Dapper mentions could have been either this or the one by the river. The style of the gateway, if the 'map' can be trusted (and in other respects it is clearly unreliable), suggests that it may have been built a hundred years or more before the first record of the wall in 1620. Actually the Portuguese must have fortified the town before declaring it a 'city', as they did in 1486.

It may seem strange that the hill of St Jago, across the river, was left unfortified, with the result that its seizure by the Dutch enforced the surrender of the castle. But, as Barbot observed forty-five years later, the hill became potentially an even greater danger when guns were kept upon it, all ready for an enemy to turn against the castle; the Dutch fort, however much strengthened, could have been taken by a determined night attack. The Portuguese, with their inadequate force, may well have thought such a risk injudicious, and have deliberately put their trust in the dense bush which restricted access to a single path. In any case they were kept short of money as well as men.

1 At only one place has any structural evidence for change been found (Fig. I la.5). Near the seaward end of the north-east curtain is a narrow space (entered between a Victorian buttress and the foot of a stair), separated from the east bastion by a wider room. Where the dividing wall meets the back wall, i.e. the inward face of the curtain, there remains the stump (a foot or two long) of an older cross-wall beside which its successor was built, and this older masonry is demonstrably earlier than the back wall; the blocks of the fragmentary cross-wall can be seen extending behind it. The present back wall must therefore be a lining added to the original inner
face of the curtain; it consists of large, rectangular (though not well trimmed) blocks mixed with rubble and a few scraps of red brick, which appear, from the colour and texture, to be Portuguese. The masonry of the fragmentary cross-wall looks similar.

THE DUTCH PERIOD (1637-1872)
HEN the Dutch took over the castle, the lay-out was in general the same as it is today. That, however, applies only to the groundplan; information obtainable from old views proves that some of the upper portions were considerably different, while examination of the actual buildings has shown them to consist very largely of Dutch brick in the ground floors, and to contain doorways and windows lined with Dutch bricks on the upper floors, even where these are known to have reached their present height under the Portuguese. The amount of rebuilding vastly exceeds that which might have been needed to make good the damage caused by bombardment. We know that the Dutch began their attack by seizing the hill of St Jago, up which they dragged four cannon and a mortar; their fire (into and across the riverside yard) induced the Portuguese to surrender, but the accounts of the siege do not suggest that it caused much destruction. In 1640, or a year or two later, however, the north bastion 'had to be' rebuilt, probably as a result; it is significant that the Dutch retained that part of the Portuguese structure which could not have been brought under fire from St Jago, whereas they entirely demolished the half which had projected into the riverside yard. Instead they built a low gun-platform along the inner side of the curtain-wall (and called both this and their truncated bastion 'The New Battery' - the Dutch rarely used the term bastion). One alone (P1. 8b) of the numerous copies from a lost drawing, which illustrated the reconstruction, hints that another piece of work, undertaken immediately after, should be associated with damage in the bombardment, by showing a number of cracks in the north tower, the north-west curtain of the rectangular block and the west bastion - that is to say for the entire length of a thickening with which the Dutch, by 1644, had covered the Portuguese masonry. Although no such cracks appear in the other copies drawn for Vingboon from the same original, they can scarcely have been a gratuitous invention by one particular copyist, and we may assume that this façade had been weakened in 1637.

No other part of the castle is likely to have sustained any serious injury from the bombardment. Neither of the longer sides can have been subjected to full-on cannonade at short range, and though ships may have exhausted their ammunition against the seaward end, their fire could not have been accurate in the perpetual movement of the Atlantic rollers; a few cracks are, however, visible there on another Vingboon drawing (from an original so early as to represent Fort St Jago as a mere palisaded earthwork). The majority of the Dutch constructional work must therefore have been undertaken for the sake of improvement. Probably
there were two main objectives: to obtain weatherproof storerooms and to increase the living accommodation; the former was achieved on the ground floor, the latter above. Slaves awaiting export were kept in rooms precisely like those used for storing goods; the realization that special prisons were required came later, when the trade had expanded to a degree no one had anticipated.

Except in the former Portuguese church, the ground-floor rooms throughout the great courtyard and rectangular block are now vaulted, and in every known instance the vault consists of Dutch bricks; wherever that is the case, we may assume that it has replaced the previous wooden floor of the room above. Walls of no great strength could have carried the wooden floors, but the change to vaulting must have entailed thickening, if not complete rebuilding; usually the brickwork begins at ground level and continues upwards into the vault. Upper storeys are floored with wood, and covered with flat or gabled roofs according to the width of span. Comparison of old views with the present buildings demonstrates that in many parts of the castle the height was increased (as, indeed, the substitution of vaulting made inevitable). In places the Dutch added two or more storeys; they also added a number of completely new buildings in the riverside yard - elsewhere there was no space.

The evidence enables us to trace, but only vaguely to date, the stages of Dutch building and rebuilding. Divergencies between the plan of 1637 (Fig. 8) and the version which was copied for Vingboon may be explained on the ground that it was brought up to date soon after 1645, and a pictorial survey of 1665 was also copied for the Eugen Atlas (Pl. io), but the subsequent plans range only from 1774 to 1799; they establish that by 1774 the reconstruction had been virtually completed, and that all the present buildings in the riverside yard already existed. But the process can, to some extent, be followed from a number of views, down to 1727.

Such literary sources as are yet available belong or relate almost exclusively to two brief periods, 1639-47 and 1668-82; no doubt, many scraps of information will eventually be found among the enormous mass of papers accumulated from 1675 to 1791 by the second Dutch Company, and as yet uncalendared. Its predecessor's archives were destroyed more than a hundred years ago, apart from a few bundles, which include the diaries of two successive Governors, 1645-7. The condition of the castle immediately beforehand is described, in exceptional detail, by Michael Hemmersam, a Nuremberg goldsmith, who enlisted at the age of twenty, for the sake of adventure, as a soldier of the Company. He reached Elmina on Christmas Eve 1639, and left in January 1645; his account of his travels was published by his widow in 1663, with prefatory remarks which suggest a considerably earlier date of composition, and a phrase towards the end of the description points to 1645-6. Except for his introductory statement on the situation and general shape of the castle, his account deserves to be quoted complete; the translation is as literal as possible, and the interpolated explanations rest on good authority - mostly that of the key which accompanies the later copy of the 1637 plan (Fig. 8), to which
references are inserted. He begins at the great courtyard, behind the main entrance (i).

When you come inside the castle there is a large open space (2) on which is a church (3) that nowadays is used as a buying- and trading-house. Inside the innermost gate you go a long way towards the right and come to some steps leading upwards. Thereby you can go on to the Armourer's Battery [south bastion (7)] which goes leftwards to the sea but with its right half to the land, and upon which at that time stood six cannon, which were fired towards oncoming ships and made them welcome. From there you go along a passage to the battery [east bastion (5)] where the guardroom stands [behind the seaward curtain, on the upper floor]; there a bell on the walls is pulled by the soldiers and struck as often as the hours are struck among us on our towers, and this battery lies wholly towards the sea; on it likewise stand six cannon. To the left is another very long passage to the new battery [the reconstructed north bastion (14)], off which you cannot go, because of the height of the walls, except down by a staircase provided for the purpose and across two other staircases, by which you can come to the new battery [the low battery in the riverside yard], which stands parallel with the sea on the right; under this [north bastion], all the Governors who ever resided in this castle housed their gunpowder. This place had to be renewed in my time, and when the Africans had carried everything out except one cask of powder, the armourer went in there to make an inspection with a light, being unaware that powder had spilled here and there on the ground.

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when it was being carried out; a spark fell on it, whereat immediately it caught fire and the whole cask exploded. The armourer could not get out from the fire, nor could men come to his help. But he was not in the least suffocated by the fire, nor burnt, although his tongue was already absolutely black and the skin of his hands looked like gloves, and for a few hours there were signs of life in him, till he finally gave up his spirit.

The afore-mentioned battery [the north bastion (I4)] was newly built, and only two cannon were placed upon it. If you climb up some steps there, you come to a tower [the north round tower (13)], in which lived the Treasurer and above him the Crew Master [Commodore], who is in command of the ships. If you go up another stair, on your left is a gallery inside the castle to outward [an enclosed passage behind the outer wall of the rectangular block]. But on your right hand is a well-built breastwork, from which you go down three or four steps and on your right hand come to the battery [west bastion (2)], on which lie nine cannon cast in brass, this is called the Governor's Battery since his dwelling is close by [in the rectangular block (i i)] ; through which you can go and come down again to the courtyard, but when you make the rounds at night and come by the way already described to this big Governor's Battery you take the same route back again.

In my time a passage was built, for greater convenience, around the [north] tower where the Treasurer has his dwelling, and a bell was brought from S Ao Tome and hung there on the walls, just as on the battery where the guardroom stands, so as to strike the hours both by day and by night. The nightly watchword is given only on the battery where the guardroom stands.

If you then go all around again, and come again under the portal where the main watch is [the gatehouse of the main entrance (I)], a draw- or drop-bridge goes from the innermost gate across a ditch [the inner ditch (18)] which goes from the Armourer's Battery as far as the Governor's Battery [south to west bastions (7-12)] ; on this you can go by a narrow track [between the ditches] as far as this Governor's Battery, which lies so high that you cannot see on to it. At the same place is a large open space [the riverside yard (20)] where many civet-cats are kept, and it is called the Cat Yard [a term later applied to any Dutch service area].

The perfume industry - an important one in those times of little washing - relied greatly on the odorous secretions of civets, which, in captivity, could be deprived of their scent twice weekly.

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Near it [at the north corner of the yard (22)], a small battery, which is very low, is named after the French, who built it and were the first occupants of this place. [An African legend of their massacre is next recounted.] There were six small cannon on it.

Farther upwards is another open space which is used as a churchyard or burial place [the enclosure, spotted on the plan, where the chapel stood]. If you come
back again by the way just described, you go through the outermost portal or gate, beside which is a drawbridge over another [outer] ditch which is divided; on the left, towards the Armourer's Battery, it is full of sea- or brackish water, in which geese and ducks are kept for the Governor's pleasure. The straight path, however, from this gate leads to the African village.

The castle is in such manner strong, and firmly built of stone; its two afore-mentioned ditches are hewn out of solid rock. The Dutch took it from the Spanish and Portuguese eight or nine years ago and now hold it garrisoned with people of German and Low Countries races. We, of whatever religion we were, were not challenged on that account or in other ways thought the worse of, though the Dutch Reformed preachers wanted it; whatever each man's religion might be, we held our Sunday with prayer, reading and singing in the Governor's quarters in the great hall, which was hung with pikes, muskets and similar weapons.

This hall is not likely to have survived a thorough reconstruction of the rectangular block, after which a room called the Governor's Hall occupied the south-west side of the top floor, and another Great Hall the south-east; the former may be on the site used in Hemmersam's time, and the dimensions could have been the same - sixty feet by fourteen feet.

One of the new pieces of building completed during Hemmersam's residence, the replacement of the Portuguese north bastion by a shorter bastion and a low battery, was obviously started after his arrival, and consequently not before 1640; it must have been finished in 1644 at the latest. The probable date of completion was 1642 or 1643 because the drawing, which shows the work at a half-way stage (P1. 8b), gives no indication that the external walk round the north tower had yet been undertaken, while the description proves that this, too, was already in use by 1644, and extended beyond the tower outside the curtainwall as far as the west bastion. Previously the route for going the round must have led either through the tower - there are now two doorways in suitable positions - or behind it, probably by means of two covered passages which seem to have run along the north-east and north-west sides of the rectangular block. The former, to which Hemmersam refers, should probably be identified as 'the east gallery' mentioned in the Governor's diary on June 21st, 1646, when sixty or seventy of the floorboards were found to be rotten. The other still exists, though probably rebuilt by the Dutch, upon the Portuguese thickening of the northwest curtain. Outside it, the breastwork continues to the west bastion, and at this date ran completely in the open; it is now covered by a building added in 1940 (omitted from Fig. i 1).

Hemmersam's description conveys a rather misleading sense of familiarity to anyone acquainted with the present castle. The obvious changes are quite minor; the outer ditch is as dry as the inner, the inner drawbridge has been replaced with a fixed gangway, the various steps and stairs which led off the north bastion no longer exist, the steps to the west bastion go up instead of down, the burial-ground
has been built over, all the remaining guns are of iron, and the bells have disappeared. An effort of mind is required to visualize how different in reality the castle must have appeared, in almost every portion. The wall-walks that surround the great courtyard did not run between the parapet and an additional storey of rooms, but between the parapet and the pitched roofs of rooms at lower levels. The whole exterior of the rectangular block has since been transformed, and most of the inner courtyard likewise, while the roofs have been joined up at fairly uniform levels. The riverside court has been lined with a whole series of buildings.

Except for one British addition inside the castle and several along the exterior, all the important changes since the Portuguese surrendered were made by the Dutch, and mainly during the seventeenth century. When Hemmersam arrived, the Dutch had afforded time for only the most urgent repairs. One of their first preoccupations was to make an earth fortification on the hill of St Jago, in case an enemy should follow their own precedent and so dislodge them. A shed, however, was added behind the riverside curtain, prior to the drawing of 1640-4. The next piece of work undertaken was a matter of restoration - the economical reconstruction of the north bastion, half as a low battery and half as a rectangular platform of roughly the previous height; not till later was there need for the steps leading down to Hemmersam's 'breastwork', when the level of the platform was raised again and given the present parapet of Dutch brickwork. The breastwork itself may have been needed to strengthen masonry which had cracked under bombardment, but also effected an improvement, the first of several which were mainly directed towards the same purpose, that of better communication between one part of the defences and another. A few weeks after Hemmersam's departure, some unspecified work was completed in 'the galleries and curtains' (the covered and open passages), with the result, as a newly arrived Governor wrote in his diary on February 25th, 1645, that 'now one can conveniently, instead of blindly, go the round in the open' A statement published by Dapper in 1668 must also refer to an early stage in the Dutch occupation; the soldiers' lodgings, which stretched along the north-east side of the great courtyard, were lowered by five feet, and a long gallery was made in the courtyard to provide for going the round. Obviously the roof had previously obstructed the wall-walk.

On February 20th, 1645, the Governor issued instructions for raising the east bastion and the seaward curtain, where a flagpole then stood (beside the Portuguese church); this work seems to have been completed by March 11th, in which case it cannot have greatly increased the height. Part of the south bastion collapsed on April 12th, and no lime was available, so that only a provisional repair could be effected, using clay mortar; this required sixteen days. Later, the stone paving of the west bastion subsided and became so uneven that 'the guns could no longer look out of the ports' (June 20th, 1946); the top was therefore raised, probably to the existing level. No date can be assigned to an excrescence.
from that bastion, known only from drawings, which make it look like a miniature bastion (Pl. 9); it filled the gap between the inner and outer ditches - where a British shed (now demolished) is seen on the aerial photographs (Pls 14, 15) - and can be identified as a gate-house which controlled access to the riverside yard. On September 16th, 1645, the Governor 'had a kitchen built outside the church between the pillars, eleven feet long by five feet six inches wide' It consists (Fig. i ia.6) of an open-fronted lean-to and an enormous chimney, built entirely of brick; in 1774 it was described as 'the kitchen of the community' On December 7th the great courtyard was paved with local stone.

Meanwhile a new Governor-elect had arrived. On Christmas Day he took up his proper 'living and sleeping quarters in the great tower', meaning the rectangular block (as other references in his diary prove). The Portuguese Governor of 1601 had used the south tower, but this was allotted by the Dutch to the chief merchant (Fig. 8,9). This tower still contained only one room, and was so represented on the drawings, probably of about 1640, that were copied about 1665. By that time, however, the polygonal front had already been continued upwards for two more storeys. The Portuguese room below was re-fronted on the outward side, with a doorway to the thickened curtain; the threshold is a narrow slab of marble, which obviously had been re-used, because it is slotted as though a metal upright had originally been fitted; it might have belonged to the chancel rail of the Portuguese church. The superimposed Dutch rooms are much larger, each having an area of 375 square feet; they are well-shaped, with five outward facets and a straight back. A plan of 1774 describes the upper room as the Council Chamber and the lower as the Governor's bedroom. More than a century earlier, in 1665, Admiral de Ruyter had his portrait painted (Pl. 6) in one or other of the twin rooms, then furnished with a four-poster bed, an oriental carpet for a table-cloth, and wall-hangings of a floral pattern; a figure symbolizing Africa displays a picture of one of the English forts he had captured. The oil-painting, by de Witt, is the earliest representation of the tower as rebuilt; the exterior first appears on an engraving attributed to 1682. The Portuguese facing of the lower portion may have been retained. Of two slabs built into it (Pl. I8), one is Dutch but the other might be Portuguese; it could have been transferred by the Dutch, if they found themselves obliged to re-front the Portuguese polygon, but that seems improbable, especially as Vingboon drawings (Pl. 9b) show two such things on the old low façade of the tower. One slab bears a Latin inscription commemorating the Dutch conquest in 1637, worded as though it had been composed immediately after the event.' The other (Pl. !22a) is a very competent carving of an armorial shield beneath a nobleman's helmet and mantlet of plumes, and from the style should not be much later than 1650. As the original colouring of the arms has been obliterated, their bearer may have belonged to any of two Portuguese or three Dutch families,2 but none of their members is known to have been connected with the castle.
At the change of Governor in December 1645, an inventory was taken of the Dutch possessions on the Coast. The castle was armed with twenty-one large brass guns (including one forty-eight-pounder mortar and six twenty-four-pounders, one fourteen-pounder cannon, and five twelve-pounders), besides four iron pieces mounted on the so-called 'French' battery; three small guns were placed in the town, while the position of seven others is not specified. There were over 3,000 cannon-balls, presumably of iron, and 153 of stone; a relatively small stock of powder was kept - 2,623 lb. - probably in order to avoid deterioration, and 53 and 130 mortar-bombs of twelve and eight lb. respectively. There were 53 spare muskets, besides those issued to the garrison. Workshop and ships' equipment of the most diverse kinds is enumerated, in quantities which must have provided for sale as well as for the requirements of the resident artisans or the little fleet of coasting vessels (which were built and repaired in the riverside yard). The 'twenty anchors ranging between 200 and 1,000 lb.' were clearly meant for sale, and no doubt many other classes of goods were available.

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to the ships which called on their way to and from Asia and America sometimes to get repaired. Canvas for sails, and salted or dried food, must have been among their constant requirements and were stocked in abundance. The forty-one barrels of meat contained nearly eight tons' weight, and even the 500 lb. of salt fish seem out of proportion to the castle's population. The Europeans numbered eighty-five, the slaves one hundred and eighty-four, but they, of course, ate African food. Apart from the garrison of sixty-nine officers and men (who took turns to guard Fort St Jago also), there were the Governor and the treasurer, four Europeans concerned solely with trade, nine in charge of handicrafts, and a lay preacher ('sick-comforter'), who at this date conducted religious services on Sundays and Thursdays, and acted as a medical dispenser, in the absence of a chaplain and a doctor. From time to time a chaplain had been appointed, but invariably resigned and went back to Holland; a dismal collection of pious books awaited the next, together with seventy-two copies of the Psalms. The duties of medical officer were being performed by unqualified 'surgeons' or 'barbers' The medical stores in the castle included one hundred and forty-seven varieties of ointments, plasters, drugs, etc., as a common stock from which the outlying forts and the coasting vessels were supplied. There was no quinine; its virtues had only just become known in Europe.

No one was allowed out in the evenings - the gates were kept shut from nightfall to daybreak - and so the occupants of the castle might have escaped malaria and yellow fever, because the wind off the sea keeps mosquitoes away, but Fort St Jago enjoys no such immunity, and the system of guarding it by roster exposed the entire garrison to infection. On the slopes around the fort, and in the valley beyond, grew fruit, salads and green vegetables - preventatives of scurvy; this garden is first mentioned in December 1645 (when one Governor held a farewell party there, and his successor was entertained to a picnic lunch), but must have been planted soon after the Dutch conquest, since new palings to repair the
surrounding fence were needed as early as October 22nd, 1646. No other measures to preserve health are recorded, but that was clearly one of the motives for reconstructing the castle; meanwhile the living quarters must have fomented all kinds of sickness. The soldiers' lodgings, backed against the curtain-wall of the great courtyard, admitted air only on one side, and the rain frequently came through the roofs. 'It is pitiful to see that all the soldiers' huts and storerooms are so leaky that it cannot be remedied unless the Hon. Gentlemen [Directors of the Company] will send us lime and tiles,' noted the Governor on April 15th, 1646. On April 26th of the previous year a storm 'of extraordinary violence' had blown tiles off 'the lodgings' - perhaps not only those of the soldiers.

Roofs throughout the castle were generally tiled, as the drawings indicate. The wood of the roofs and floors was constantly needing replacement, which involved an immense amount of labour; the timber had first to be cut at Shama, or even at Axim, shipped along the coast to Elmina (on the ketches built there by the Dutch), and sawn up by the castle slaves. Obviously large repairs could not be executed quickly unless a large stock of materials was kept safe from the weather; no tiled roof could be watertight against rain which sometimes blows horizontally, or even upwards, and the percolation through the floors must often have reached the materials, food supplies and trade goods. No wonder the Company adopted a policy of vaulting all storage space, which in the old parts of the castle comprised the entire ground floor; for upper floors wood was retained. Although bricks were sent from Holland, their transport cost practically nothing because they came as ballast. The bricks are invariably thin, and with rare exceptions of a pale colour, varying from cream to greyish-lemon; in de Hooch's well-known picture in the National Gallery, London, precisely similar bricks pave the courtyard of a red-brick house. The sizes vary only slightly; perhaps the commonest measures seven by three by one-anda-half inches.

The oldest examples of brick vaulting in the castle are probably those at the base of the rectangular block, the first reconstruction of which seems to have been completed before 1665, at any rate on the side towards the great courtyard. The new facade is represented on Vingboon's bird's-eye 'map', which claims to be derived from a survey of 1665 (P1. I o). Unfortunately the drawing is unreliable; it even shows a building in the outer ditch, at the end which was kept full of water. But there can be no doubt that the top of the Portuguese tall rectangular tower had been demolished, and the facade rebuilt to compose a fairly symmetrical design, with a taller gable at the centre; that much is confirmed by engravings after drawings of 1668 (or earlier) and 1682 (Pls I I a, 12). The details, however, vary in every representation. For the lower portion and the terrace outside there is no evidence other than the 'map', which unmistakably illustrates the buildings almost as they now exist. The heights of the terrace and porch are exaggerated, but otherwise the only discrepancies are that both the double staircases appear straight instead of curved (as might be expected, considering the
difficulty of representing curves in schematic perspective), and the single flights at the corners are ignored. The porch is indistinct on the drawing; above it, instead of the present balcony, is seen a piece of

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decoration, vaguely triangular, and perhaps of similar nature to the curvilinear design (Pl. 35b) which is formed by projecting bricks above the doorway of the Dutch chapel. The balcony, however, is represented on both the engravings, and the later (Pl. 12) gives it the look of a Roman temple, with pillars on either side rising to a pediment across the whole width. This appearance does not necessarily mean that the balcony was covered by a gabled roof; a pair of pilasters, engaged in the wall, remains beside the doorway, and probably a triangular or other ornamental design was merely outlined on the wall above. The facade was decorated elsewhere with patterns formed by projecting bricks, but some were chiselled flat and others completely destroyed when the gable was removed and the whole top made rectangular, between 1682 and 1725. In 1957, when the old plaster was scraped off, a row of triangles and circles was discovered beside the balcony (Pl. 28), their bases being approximately level with the top of the doorway; similar ornament has always been exposed on the back of the chapel (Pls 31b, 33a). The Great Hall within must have been formed simultaneously, by removing partitions - one at least had unquestionably existed, making the side of the tower, and unless the gable was a non-structural sham there must have been a second; possibly, also, two storeys may have been combined. The length is sixty-four feet, the width only thirteen feet nine inches. The floor, of course, is wooden. The rooms below, in the second storey, rest on brick vaults, which rise from the ground level; the Dutch strengthened the stone Portuguese walls in this manner throughout the whole of the rectangular block.

According to the plan of 1637 (Fig. 8. io), this south-east side of the rectangular block was no thicker than the present width of the Great Hall (Fig. i ic), and the narrow rooms behind must therefore have encroached upon the original area of the inner courtyard; probably the Dutch built them when they formed the Hall. Only the vaulted ground floor has escaped subsequent alterations, most of which are due to British improvement of the staircase, which, as represented on a plan of 1774, was cramped and turned awkwardly. A first-floor room at the south end used to be entered from the Dutch staircase but now has to be reached from above, through a trap door and down a ladder. On the opposite side of the staircase the present floors do not correspond with the old levels, as is demonstrated by the position of a blocked window, intermediate between the second and third storeys.

The passage from the great to the inner courtyard (Fig. i ia. i6) is vaulted in Dutch bricks, both where it passes along the exterior of the east corner room and where, after a right-angled bend, it widens and pierces the north-east side. According to the bird's-eye 'map' (Pl. io)

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the first, narrow portion had already been covered over by 1665, doubtless with the present cross-vaulting (Pl. 31a); the second may conceivably have still retained a wooden ceiling but can scarcely have done so more than a few years longer. The remainder of the north-east side is short, because it ends against the Portuguese round tower. On the ground floor the walls towards the passage and the inner courtyard are interrupted by wide arches, so that the vaulted space forms a loggia rather than a room; the pavement consists of Portuguese bricks, which seem to have been relaid.

The top floor is occupied by the chapel. Externally (Pls 31b, 33a), it is decorated with triangles and circles in projecting bricks, such as used to be visible on the façade towards the great courtyard, and a centre-piece over the main doorway (Pl. 35b) may also have been paralleled there. The patterns on the front were afterwards chiselled away and plastered over (Pl. 34b), to conform with a change in taste, but some at the back are intact, though others are partly concealed by the roof of a later balcony-passage (Pl. 33a). The chapel may be some twenty years earlier than 1682, when it is first recorded. No other part of the rectangular block is so tall, or was so carefully designed. Whereas all the windows in the other reconstructed buildings are rectangular, here the old-fashioned rounded form is used. The tall, round-arched lights are grouped in pairs, which on the inner side are recessed under a single low arch (Pl. 32a). One pair was afterwards converted into a doorway. Another small doorway, leading into the north tower, may be older than the chapel, but the main doorway was unquestionably constructed for the purpose. Above it, on the inner side, is carved, in Dutch, a sentence from Psalm 132, 'Zion is the Lord's rest, it is His dwelling-place to eternity.' Externally the arch is emphasized by a slight projection within the rectangular frame of a cornice and pilasters. The landing of a double staircase (Pl. 34b), which descends to the north bastion, is no wider than the double door, and the pilasters stand awkwardly upon the steps, half of each on the first step and half on the second. The parapet along the landing is lightened by a row of lancet openings (with tops composed of two bricks leant together), but the nearest opening on each flight takes the form of half a pointed arch, while two lower down form complete pointed arches; by these expedients the spacing was kept even. An arch beneath the centre of the staircase leads to the first-floor room below the chapel, and there are windows either side of the lower steps to light it.

The platform of the bastion probably did not reach its present level till the chapel was under construction. The platform, as rebuilt in Hemmersam's time, must have been several feet lower if no steps were needed to go from it to the breastwork round the north tower, and in fact it has obviously been raised; the outer walls are of stone below but topped with many courses of brick, which begin -where the base of the former parapet may be presumed to have stood, level with the platform of 1640-4. The raising of the platform slightly increased the range of guns mounted on the bastion, but this advantage was negligible compared with the benefit involved by making the level
correspond with the floor under the chapel itself - a longer stair, if built parallel with the chapel wall, would not have left space for windows on the first floor, while any stair at right angles would have made difficulties for the gunners. We may therefore assume that the bastion was raised to its present level when this side of the rectangular block was reconstructed, and there is no reason why the staircase should not have been built immediately after. The parapet of the bastion may be contemporary on the face towards the river, where there are two arched ports, but towards the bay the height is much less; probably the parapet had originally been taller and was cut down to allow the guns to fire higher. Plans of 1774 and about 1786 already show a thin and therefore low parapet, with six open embrasures. An oblong sentry-shelter at the apex (Fig. 9.15) was corbelled out, as represented on a view of 1682 (P1. 12); similar shelters stood on the seaward bastions. The steps which lead from the bastion to the breastwork round the north tower must be of the same date, because they intersect the platform. A gateway across the top of the steps (P1. 35b) seems roughly contemporary; it is built against the chapel and is also joined to the parapet (with which it is aligned). On the side facing the bastion, the arch bears a brick architrave and pediment with mouldings like those of the chapel; the vaulted passage is needlessly prolonged, and a gabled roof continues from the pediment to the far end, which is completely unornamented. The function of the gateway must have been to control entrance to the breastwork; since the public means of access to the Governor's office is likely to have gone this way, there may have been need for a covered waiting-room - hence the elongation of the passage.

The Dutch alterations to the north tower would have involved the least trouble if undertaken when either the chapel or the north-west side of the rectangular block was under construction. The Portuguese conical roof is last represented on the 'map' (P1. io) which claims derivation from a survey of 1665, and a flat top is seen on engravings (Pls i i a, 12) from views of 1668 (or earlier) and i682, while another view, engraved in 1704, differs only in showing a larger base for the flagpole on the summit (P1. 13a). The windows were placed, according to the two later engravings, roughly as at present, and it may therefore be a fairly safe presumption that the Portuguese windows had already been replaced by the existing Dutch set. The highest row, which is interrupted by a doorway, reached from the roof on the west (P1. 36a), and surrounds the room where the bells were hung. The roof is a brick dome, composed of intersecting arches and of panels that fill all the segments between them except one, which is covered only by a trap door. The parapet also consists of brick; long slits in it command a view in all directions. There is no structural reason for thinking that the brickwork was added immediately after the removal of the conical roof, but the style of the dome points so clearly to the seventeenth century as to leave little doubt.

The north-west side of the rectangular block must also have been reconstructed during the seventeenth century. A brick fireplace remains on the top floor and was in the Governor's kitchen, according to a plan of 1774; its chimney (P1. 35a) is clearly contemporary with the building. A fireplace of comparable size to that
used by the soldiers was required because so many officers regularly ate at the
Governor's table. The room itself gave ample space for preparing elaborate meals.
Unlike any other upper room, it is paved with brick. Whether the weight proved
excessive, or because dry rot attacked the supporting timber, the underlying room
was afterwards filled solid with rubble.
A single vaulted room (P1. 32b) extends practically the whole length of the south-
west side, till a partition blocks it off from the base of the Portuguese round
tower; the space around the curve was utilized in 1774 as a powder magazine. The
first-floor rooms communicated with those that adjoin on both the north-west and
the south-east sides, but the former alone remains accessible (though only by
ladder). The second floor contains the Governor's Hall alone; externally, instead
of the existing colonnade (Fig. i Ic.26), there was a terrace, safeguarded by a
parapet lightened by a row of openings, except where it was interrupted by an
ornate porch. This is shown on an engraving of 1704 (P1. I3b), together with
fantastic ornaments which crowned the wall behind. The main feature was an
undercut gable with an elaborate finial; less complex versions of the same design
stood on either side of the gable base and at the corner of the building. The rococo
style suggests a date near the middle of the seventeenth century; the
reconstruction below might, of course, have been completed some years earlier.
The general reconstruction of old buildings, first in the rectangular block and
afterwards in the great courtyard (though the two programmes may have slightly
overlapped), seems to have taken practically 145

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the entire latter half of the seventeenth century and the beginning of the
eighteenth. Progress would in any case have been slow, in order to cause as little
disturbance as possible to the daily work of the occupants, and must have been
further delayed by turning effort on to improving Fort St Jago. The earthwork first
constructed on the hill, in 1638, was replaced in stone by 1666, and the outer
enclosure was added five years later, completing the fort in its present shape,
apart from the later ravelin outside.
The condition of the castle in 1682, when the internal reconstruction was already
well advanced, is described by Barbot, who also drew it (P1. 12):

This castle is justly become famous for beauty and strength,
having no equal on all the coasts of Guinea. It is built square, with very high walls
of a dark brown rock stone, so very firm that it may be said to be cannon-proof ...
Two of the batteries lie to the sea, and are, as well as the walls, of a prodigious
height ... the point of the peninsula on which they stand being a high flat rock;
besides two lower, on the side of the river, where the ground descends gradually
from the rock. And on these batteries forty-eight fine pieces of brass cannon, with
several pattareroes [saluting guns].
The lower battery on the outworks is full of iron pieces, which are
fired on all occasions of saluting ships and the like.
The garrison commonly consists of one hundred white men,
commanded by proper officers and perhaps as many black soldiers,
all in the Company's pay.
The drawbridge is defended by a redoubt [the west bastion] with eight iron guns, and a ditch in the rock twenty foot deep and eighteen broad, with an iron portcullis, and four brass pattareroes within the gate, and a large corps de garde [guardroom] next to it; besides, the bridge is commanded by the small arms from the castle, which renders the passing over it very difficult. On the land side the castle has two canals always furnished with rain, or fresh water, sufficient for the use of the garrison and ships; which were cut in the rock by the Portuguese, whom it cost much money and labour to blow up the rock by little and little with gunpowder, especially that which is at the foot of the walls on the town side.

Besides three very fine cisterns within the place, holding several hundred tuns to save the rain, so that the garrison is in no great danger of wanting water. There is room in the castle for a garrison of two hundred men and several officers, who may all be conveniently lodged. The inside of the castle is quadrangular, built about with 146

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fine storehouses of white stone and bricks, which thus form a very fine place of arms [parade ground, i.e. the great courtyard].

The general's [Governor's] lodgings are above in the castle, the ascent to which is up a large white and black stone staircase, defended at the top by two small brass guns, and four pattareroes of the same metal, bearing upon the place of arms; and a corps de garde pretty large, next to which is a great hall full of small arms of several sorts, as an arsenal; through which and by a by-passage you enter a fine long gallery, all wainscotted, at each end of which there are large glass windows, and through it is the way to the general's lodgings, consisting of several good chambers and offices along the ramparts. The chapel on the other side of these rooms is a pretty neat building, and well fitted for divine service; at which I was present on Easter Day, 1682 ... The infirmary or hospital lies along the ramparts towards the river side; and can contain a hundred sick men, decently attended: and by it is a large tower, which overlooks the redoubt, but has no guns. The warehouses either for goods or provisions are very large and stately, always well furnished. The compting-houses particularly, are large, finely fitted for the factors, accomptants, bookkeepers and servants, being in all about sixty persons. Over the gate of a spacious warehouse is cut in the stone, A' 1484, being the year it was built by the Portuguese, in the time of John the Second, King of Portugal. The characters look yet as fresh as if cut but twenty years ago. In this fortress is a battery without shoulders [the north bastion], with some pieces of cannon, to batter the fort on St Jago's hill if necessary. The goods and provisions are brought in a gate that leads to the strand, where they are all hoisted up by cranes or tackles, and in the same manner laid out again.

This place has been brought to the perfection it is now in at the charge of the Dutch West India company. It was nothing near so strong, nor so beautiful, when they took it from the Portuguese.
Barbot also makes brief statements about the stone wall which still, as in Portuguese times, guarded the western approach to the town (Pl. 7b), and upon Dutch works outside the castle. A bridge across the river was so constructed that the central portion could be lifted when security demanded it or to let small ships through; they refitted on the tidal flats upstream. He represents the bridge as an almost flat wooden structure with the central piece arranged to swing up to a gantry, in drawbridge style. The purpose of the bridge was to make communication with Fort St Jago both quicker and easier than in 1643, when by

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Hemmersam's account, getting ferried across by canoe was almost equivalent to a voyage along the coast. On the slope below the fort there stood, by Barbot's time, a summer-house in the middle of the Governor's garden. An engraving of 1704 represents it as a little classical building, which apparently consisted of a raised wooden platform, a circle of wooden arches and a dome of thatch. The soil on the hill is unusually good, but the Dutch must have enriched it frequently, otherwise it could not have supported the diversity of trees and plants which impressed Barbot, some forty years after the ground was first planted. Even so, an eventual decline in fertility could not be prevented, and by 1799 the hill had been abandoned to the bush.

Among the crude illustrations to Bosman's book of 1704 are two views of the castle (Pl. 13), which differ from those of other buildings in being more detailed and obviously based on an intimate knowledge of the structure. Bosman, however, felt obliged to apologize for errors which would be evident to anyone who had seen Elmina; the draughtsman, in fact, had died without completing the set of sketches. Apparently he left only one of these particular views, that from the landward side, in fit condition for the engraver (who, however, misunderstood some of the incompetently rendered details). The other (Pl. 13a) seems a compilation of sketches made from two viewpoints; the background gives a representation from out in the bay, somewhat east of north, and is separated by a fantastically exaggerated gap from a foreground seen from across the river, considerably west of north. The bridge (which by this time can scarcely have retained much of the original timber) is drawn as a flat gangway resting on piles (whereas Smith's very distant view of 1727 makes the centre rise higher than the sides). The bridgehead on the castle side was protected by a rather ornamental gateway, a trifle advanced in front of an embankment which confined the river from here to the mouth. Immediately behind is seen a great open space, where canoes and logs lie scattered; this may be an ignorant duplication of the riverside yard, the outer wall of which is clearly represented at the back but foreshortened, as it would appear from the direction of the bay. The existing small gateway in the wall is indicated; actually it opens only a few paces from the river, but some fourteen feet above ground, and is reached by a wooden stair, a prototype of which is marked on a plan of 1774 (Fig. 9.34). Three small gabled buildings are visible beyond the wall, precisely where the plan of 1637 marks them, and farther back stands the dovecot (Fig. 9.33), concealing the existing gateway (clearly seen on Pl. 14) which must already have led from the court to a fortified bank between
the ditches. The companion engraving (Pl. 13b), a view from slightly south of west, represents the actual wall

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along the bank but in a confused manner, obviously due to misunderstanding the original sketch. In the absence of evidence to the contrary, the defences of the bank may be supposed already to have taken their present form, which is certainly represented in 1774, and a description is therefore best placed in this context. The arched gateway from the riverside yard springs across to the west bastion, and is ornamented only on the face turned towards the yard. Beyond, after a right-angled bend, lies a passage, bounded on the inward side at first by the bastion and then by a parapet along the outer edge of the inner ditch; on the other side a defensive wall runs the whole length of the outer ditch (Pls 15, 17b, 21). The parapet of this wall is everywhere pierced with openings for musketry, wide within and narrowing outwards to a slit, but the provisions for the angle of fire differ from place to place. Along the first stretch (Pl. 21b) the openings are infrequent, and the greater thickness of the wall beneath the parapet results in a continuous shelf, level with their bases. Along the next stretch, which reaches to the gateway at the drawbridge, the openings are close together, and each is supplied with its individual little shelf, while in the intervening space a higher shelf slopes up and meets the parapet a few inches below the tops of the openings. The change of design occurs where the ditch begins to cut through the highest piece of ground and therefore becomes deeper, since its rock floor remains horizontal. Along the first section, men could take aim at any requisite angle while resting their elbows on the continuous shelf, but on the next section, where they might need to point their muskets lower, they were offered a choice between a shelf at the same level and one for firing downwards. A third section (Pls 21a, 17b) begins before the drawbridge is reached and continues beyond it to the end of the ditch, which becomes increasingly shallow all the way in conformity with a steady downward slope of the ground. There is no distinct parapet along any part of this section; the wall maintains the same thickness to the top, and the openings are pierced through it, without arm-rests. The design must have been adopted to compensate for the greater ease with which an enemy might enter the ditch; on this section alone could a man press himself against the openings and so take aim even more steeply downward. If the defenders were overrun by the enemy they could escape through an unornamented gateway (Pls 15, 17b) to the platform at the foot of the south bastion. On the platform stands an L-shaped building, across the end of the outer ditch and prolonging the line of its outer edge, and this, too, is equipped with musketry-openings (Pl. 17a,b), added in Dutch brick above the stone walls (with a most irregular junction); the building had probably been reshaped since 1637, and in 149

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1774 was used as a lodging. The raised battery at the far end then retained three closed gun-ports, presumably arched, of which one commanded the rocky shore
westward and the others looked out to sea; a bench against the wall enabled the gunners to sit protected from the spray or the splash of exceptionally large waves. Unquestionably the bank between the ditches was fortified between 1645 and about 1702 (the probable date of the original drawing), and Barbot's otherwise inexplicable silence on the matter narrows these limits to 1682-1702. Analogous musketry-openings, more or less square on the inward side but narrowing to slits externally, may be seen on the outworks of many forts and are recorded in views of others, but give no help for close dating; they range from 1671 at St Jago to the middle or late eighteenth century at Christiansborg and Ningo (Fig. 2), and to the very end of that century at Keta. A clue to the date may, however, be obtained from the gateway (Pls i9, 21 a) which interrupts the wall between the ditches; though Hemmersam seems to imply the existence of a gateway here in 1639, because he calls the two at the extremities of the bridge the 'innermost' and 'outermost' gates, the present gateway must be later. It consists entirely of Dutch bricks, except for the iron cannon-balls which have replaced three finial ornaments of the same shape that were raised on short pedestals, according to the engraving of 1704 (Pl. 13b). With the gentle rounding of the top and the unemphatic mouldings above the arch, the bold curves whereby the sides descend, and the oval lunettes which flank the passage, a seventeenth-century origin is clearly indicated, and the most likely period is near the end of the century. Consequently, if there really was a gateway on this spot in Hemmersam's time, it was certainly a predecessor of Portuguese origin. His 'outermost' gate likewise was the apparently medieval and obviously Portuguese structure illustrated in 1640 (Pl. 9a), but the Dutch must soon have replaced it by the ornate gateway shown on the 1704 engraving, because the style, as drawn, is not appreciably later. It stood outside the outer ditch (where there is now a mere gap), and a short stretch of palisade prevented anyone reaching the bridge except by passing through the arch. Evidently the palisade no longer extended all the way to the sea, but a parapet had not yet been built along the outer edge of the ditch. At roughly the same time as they built the gateway between the ditches, the Dutch began to reconstruct the rooms that lined the great courtyard. The entire ground floor behind each curtain was gradually covered with brick vaulting (except in the entrance, where, at some date after 1682, the portcullis was replaced by a door; the gateways are reconstructions in Dutch brick). Above, on each of the three sides was

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built a continuous row of rooms, with their doorways opening off the wall-walk, while on the court side were windows and, in four places (according to a plan of 1774), doorways, reached by wooden stairs; there was, in fact, quite good cross-ventilation. The majority of the Portuguese buildings had been two-storeyed but cannot have been as tall, because, seen from outside, the ridge of the roofs scarcely showed above the parapet; the rooms within could have been reasonably lofty, since the wooden floors must have been several feet thinner than the subsequent vaulting. Finally, the Dutch laid almost flat roofs (all of which have since been replaced, with iron girders instead of timber supports), and so created a
broad walk around the three sides of the courtyard, one storey higher than the narrow walk along the top of the curtain, and bordered by a sheer drop on the inward side; both sides are safeguarded by parapets, with lancet openings (Pls 15, 25, 26a). In general the masonry of the upper storeys must be Dutch, though near the south corner of the rectangular block Portuguese work can be recognized up to a rebate on the facade (P1. 23b). At the back of the ground floor the Portuguese curtain-walls have undergone few alterations, but the cross-walls certainly, and the façades probably, contain more Dutch than Portuguese masonry. The doorways and windows now exposed are all lined with Dutch bricks, but for a few (probably British) windows framed in wood alone; maybe the Portuguese had normally relied on wood, and instead of replacing each piece when it decayed, the Dutch preferred to arch every opening without delay. But the only Portuguese window they are known to have left in the courtyard (though blocked with rubble) is flat-arched in brick; in this instance the position, just above a new or renovated doorway on the ground floor, was incongruous with the height of the Dutch vaulting.

The north-east side of the courtyard, that beside the bay, may have been the first to be reconstructed. Certainly Barbot in 1682 drew a continuous building of the present height, but ridge-roofed; no indication that the work had yet been started can be seen on a view not later than 1668 (P1. iia), but the interval of some fifteen years would have allowed ample time for completion. There is no ground for supposing the ridge-roof to have been a mistake by either draughtsman or engraver; on the contrary, the flat roof appears to have been a later alteration on all three sides of the court. A ridged roof still covered the seaward end in 1724-5 (P1. iib), though Smith's distant view of 1727 suggests that all roofs were then flat. Smith also supplies the earliest evidence of the buttresses placed against the exterior of the curtain, though he drew three of normal size, perhaps by mistake; there is actually one normal buttress and one of extraordinary length (Fig.

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ii a.4,3). The need to shore up the old wall in this manner may well have been realized when the vaults were built behind. Beyond the elongated buttress, the line of upper rooms is prolonged by the two upper storeys of the early square tower, past which the wall-walk continues to the north bastion. At the junction with the tower, the walk is spanned by an archway, the outward support rising from the parapet; a little room above the arch is surrounded by a stepped cornice, presumably composed of brick.

On the south-west side, the buildings round the courtyard now maintain a uniform height of two storeys, except for those which meet the rectangular block; here two additional storeys were constructed in three distinct stretches, two by the Dutch and one by the British. A rebate in the masonry of the first stretch (Pl. 23b), halfway up but slightly above the general level of the Dutch roofs elsewhere, must represent the top at a period when, here too, there were only two storeys; the length was just enough to include the entrance room which differs from all other ground-floor rooms around the courtyard, in that it is covered with a wooden ceiling, through which a portcullis was still hoisted in 1682. The rebate must
surely demarcate the top of the Portuguese building represented on the early
drawings. Perhaps the Dutch did not increase the height for some thirty years, for
a view first engraved in 1668, but afterwards rather better (P1. i i a), shows the
roof not wholly above the level of the curtain, precisely as is implied by the
rebate. Barbot's view of 1679 (P1. i2) illustrates two additional storeys on this
stretch, apparently constructed of wood, because the frontage towards the
courtyard was almost entirely composed of windows (four on each floor), beneath
the enormous gable of a very tall roof. The same building may be represented
from the opposite side, though apparently with a stone wall, on an engraving of
i704 (P1. 23b), which also shows that the second stretch, then two-storeyed, bore
a ridged roof slightly higher than a very long one which extended beyond towards
the sea probably to the south bastion. The ground floor of the second stretch must,
however, have already been reconstructed, with two little vaulted rooms entered
by doorways which are unquestionably of the seventeenth century (PIS 23b, 24).
Incomparably more ornate than any others around the courtyard, they were clearly
meant to form a pair, though by no means identical in design. They consist
entirely of brick, with round arches, under gables outlined by projecting courses
and so enclosing pediments. The doorway near the entrance is simpler in itself,
but on the peak of the gable stands a pedestal with a ball on top, and similar
finials probably stood on the corners; the design was very like that of the outer
gateway, dated 1671, at Fort St Jago (P1. 3a). The

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sides of the other doorway are rusticated with alternate raised and recessed bands
of several courses, and the centre of the pediment breaks upward in a horseshoe
curve, in which is set a grotesque face - perhaps a monkey's - carved in lime
plaster (P1. 24a); a panel below seems to have contained an inscription. An
immensely strong iron door, crossed by two bars for padlocks, remains in the first
doorway, and must be contemporary or not much later; in 17 74 both the rooms
are known to have been used as prisons, but originally they must surely have been
intended for more honourable purposes (such as treasuries, perhaps). The
unusually narrow span of the vaults may indicate that they were meant to carry an
exceptional weight, and the additional storeys may actually have been built quite
early in the eighteenth century. Smith's distant view of 1727 strongly suggests
their existence; obviously the first stretch at least had already been rebuilt to the
present height, with a low roof, but the length is not clearly enough defined to
establish beyond doubt that the second also had been completed. That the two
stretches were not built contemporaneously might be supposed because the
second consists of brick, at any rate on the side towards the curtain, whereas all
the walls elsewhere are of stone; possibly, however, the tallroofed first stretch
seen on older engravings may have provided a ready-made stone wall on that side,
though not towards the courtyard. In any case the upper storeys of the second
stretch do not seem to have been added immediately after 1704 (or 1702, since
that is the most likely date of the drawing supplied to the engraver), but to have
been postponed until a flat roof was substituted for the ridged roof which then
covered the adjoining two-storeyed building towards the sea. That change can be
dated before 1727 when, from Smith's viewpoint, far out in the bay, the building was completely hidden by that on the north-east side, as would not have been the case unless the roof had already been lowered. The cornice on the present two-storeyed building runs along the base of the parapet above the courtyard and then is prolonged across the whole of the second stretch, marking the level at which the roof must have continued there - or, at any rate, at which the builders expected it to continue. Theoretically, perhaps, the cornice might go back to the time of the ridged roof, but it could scarcely have been preserved while the top of the wall was being disturbed to lay the beams for the flat roof.

The early stages of construction on the south-west side of the courtyard may therefore be summarized as follows: (i) A Portuguese building of two fairly lofty storeys has been preserved from the rectangular block to just beyond the gateway. (2) About 1670-8 the Dutch added two more storeys above it, but the structure, at least on the

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courtyard side, was of wood; they also built vaults on the ground floor in the next two rooms, and possibly in others beyond, where a low range existed in 1640. (3) Before 1702 they built a second storey over the vaults, which now reached almost to the seaward corner, and laid ridged roofs at slightly different levels, one above the two rooms next to the tall building, the other above all the remainder. (4) Soon after 1702, they either substituted or prepared to substitute a flat roof over the two rooms, in continuation of one which they had begun over the remainder - and probably completed before 1727. (5) Probably not long after 1702, they rebuilt the two upper storeys of the tall building.

(6) Probably before 1727 they extended the tall building by placing two more storeys over the next two rooms. In 1774 both floors, over the Portuguese frontage and the twin rooms alike, were included in the Governor's lodging, and the tall building may have originated for that purpose. In the British period, the Commanding Officer took over these rooms, and another extension was built to provide a bathroom on each floor.

A total reconstruction of the short seaward end was completed, except for the roof, by 1724-5, when a Danish sea-captain drew the upper portions (P1. i i b). The work involved entirely new buildings, except for the actual curtain, and cannot have begun till certain preliminaries had been dealt with. If the Portuguese guardroom behind the curtain had not yet collapsed, its demolition must have been undertaken first of all; actually Barbot saw its place already vacant in 1679 (P1. 12). Another Portuguese relic, the room on the south bastion, had been replaced, according to the engraving of 1704 (P1. i3b), by a building with a squat chimney at either end; it, too, was incompatible with the new scheme, but could have been preserved during the earlier stages of the work. Another lengthy undertaking must have been completed, not only before the seaward end was begun, but also before the last room on either side of the courtyard was vaulted. This was the construction of a gigantic underground cistern which extends right across the end of the court. A somewhat larger cutting must first have been hewn out of the rock and then lined and vaulted with brick; these walls stand directly
under the frontage of the buildings on all three sides, and cannot possibly have been inserted at a later date. The floor of the cistern lies fourteen feet six inches below the centre of the brick vaulting, which curves in the north-west-south-east direction except at the south corner of the courtyard, where a vault at right angles enables the width to be increased to fourteen feet compared with ten at the other end, the middle section is somewhat narrower, as may have been thought necessary to avoid weakening the former Portuguese church, under which most of it lies. With a capacity of nearly 60,000 gallons, this cistern is much larger than either of those known to Dapper in 1668. Unquestionably it was designed in conjunction with the buildings above, because its walls must be far stronger than would have been needed if they were mere containers; they serve as foundations to buildings which, in two places, rise to an abnormal height and therefore impose an exceptional weight.

The vaults on the seaward ground floor have a span of seventeen feet six inches, compared with fifteen feet on the north-east side of the courtyard and twelve feet nine inches on the south-west. Above stands a second storey, just as along those sides, but upon either end of it another single room is superimposed (Pl. i5); the one beside the east bastion is called Prempeh's Tower, because it was allocated to the Asantehene during his captivity in 1896-9. The roofs over the second storey and the towers are edged by parapets with lancets (Pls 25, 26a). The roofs of the towers slope only in one direction, and would be unpleasantly conspicuous but for the parapet; as it is, the openings are all more or less blocked by masonry except those which stand in front of the downward edge. The foot of each tower is only slightly set back from the sheer drop to the courtyard, but ample space to walk past is provided on the flat top of a brick arch which cuts across each corner. The parapet on the arches is of the same height as that along the side of the courtyard, and the top keeps the same level along the seaward end, though the openings there are shorter, because the roof platform stands slightly higher.

Where the parapet above the courtyard runs behind the former Portuguese church, the lancet openings are partially filled solid to the slant of a former roof-line; the peak projected above the parapet, but the whole roof has since been replaced at a lower pitch. Below this modern roof a small triangular outline can be seen within the church, but it is more likely to have been part of some decorative scheme than the peak at a yet early period. The Dutch may, however, have reroofed the building when they inserted an upper floor. A winding stair at the back of the porch leads up to a lobby of corresponding size; the partition between this and the main upper room (in 1786 a lodging, probably subdivided) now contains two doors, separated by a post, under a curvilinear architrave (Pl. 27a), all expertly carved with mouldings in mid-eighteenth-century style. (The late Mr Hugh Thomas remembered a very similar piece of work which used to form the entrance to the former Governor's quarters behind the polygonal tower; a photograph he had preserved shows that the lintel bent downwards to the centre,
where there was no post - the door was simply two-leaved.) Near the foot of the stair, a peep-hole slit gives a view of the main lower room - the shop or market, as Hemmersam called it, and the terms found on plans of 1786 and 1799, Negotie and Magazin, imply no change of use; in 1802 provisions and local goods were kept here, and bargaining no doubt took place. Various minor alterations to the building seem to have been made at different times. All the windows, so far as they have been examined, are lined with Dutch bricks, but a lack of orderly arrangement proves that some must be afterthoughts. The oldest - because they form a set - resemble those in the chapel and may be ascribed to the seventeenth century. In contrast to this round-arched type, there are also rectangular windows of several sizes and shapes, distributed in a seemingly haphazard manner except on the end wall, where small ones are disposed in two rows. At the centre of the upper row, above the doorway, a double window of similar type was uncovered in 1957; the dividing upright consists only of one tier of bricks placed with their ends facing outwards and inwards, but a tall flat arch prevented any pressure from above. Doorways, also in Dutch brick, exist in both side-walls on the upper floor, near the back, and must have been served by wooden stairs; only the south-western door and stair are marked on the plan of 1774, by which time the other, which was rediscovered in 1957 beside the south corner of the Dutch kitchen, must have already been blocked, because the low segmental arch resembles several which cover doors and windows in the façades along the courtyard. One such, at the seaward end of the south-west side, stands between two windows which are respectively arched and rectangular, but the latter appears to have been inserted later into the rubble wall, and the lack of a brick surround is suggestive of British work. Higher up is an apparently original brick-lined oval window like those in the seventeenth-century gateway between the ditches. This is placed against the junction with the seaward side. Beyond the corner stands an exceptionally tall and wide doorway (P1. 26b), brick-lined, but with a keystone and a pair of other blocks placed, as capitals, a few courses below the arch spring; the shallow curve of the segmental arch is safeguarded in the usual manner by a round relieving arch above, but in this instance the intervening space forms a slightly sunken panel, the base of which is carefully flattened to make a semicircle. A corresponding archway at the east corner, leading into the other seaward room, is likewise very tall but not so shallow, and therefore without a relieving arch; the capitals, moreover, are genuine impost, being placed immediately below the spring. These two gateways show a care for design which can be seen in no others along the courtyard except the ornate but somewhat uncouth pair under the extension to the Governor's lodging, and evidently belong to a comparatively sophisticated age. So too do the elegant arches that span the staircases to the wall-walk (P1. 25).
A ventilating shaft (Fig. ii a.8) leads from the southerly seaward room diagonally through the south bastion, a few feet below the paving, to an opening in the southwest face. The shaft, which is brick-lined, is presumably contemporary with the vaulting of the room, though later than the bastion; since the interior of the bastion probably consists mainly of earth or sand, no great labour need have been entailed by digging a trench in which to construct the shaft. But the opening at the outer end seems to have been built simultaneously with the existing face of the bastion, because the masonry shows no trace of disturbance. Both the seaward bastions must, in fact, have been re-fronted at some date before 1774, when they were no longer propped by the series of buttresses represented in 1682; the evidence of the shaft, by associating the work with the rebuilding behind the intervening curtain, indicates that at any rate the south bastion had been refaced before 1725. Each bastion must inevitably have been widened in order to incorporate or supersede the buttresses, and the height too may have been increased when that occurred.

A minor alteration, next to the east bastion, was also effected by refacing, at an uncertain date. The frontage of the last north-east room is aligned with the rest only because it has been overlaid externally by a single thickness (seven inches) of Dutch bricks. The addition blocked a round-arched window, constructed of rather larger Dutch bricks (nearly eight by four-and-a-half inches, and of a pale yellowish grey); this early brickwork is continuous with the coigning of the doorway close by, but the wall between the window and the bastion consists of stone.

The last notable alteration in the great courtyard brought the facade of the rectangular block to its present form and created the great hall. The gable (Pl. 12) was obliterated and the whole top made even, at approximately the level which the centre alone had attained; the old patterns in projecting brick (Pl. 28) were concealed by plaster and whitewash (after, in some places, chiselling back the surface). The gabled facade last appears on the view of 1682, and the squaring-off must be earlier than 1725; a crude sketch made in January of that year (and engraved in 1727) can be accepted as fairly definite, since it is corroborated by Smith's drawing of 1727. A much decayed railing which encloses the balcony (Pl. 34a) may be attributed to 1680-1720, when wrought-iron foliage of this type was fashionable in Holland, it was the speciality of an exiled Huguenot family, trained in French taste. The balcony itself was older, but can scarcely have escaped injury during the reconstruction of the top floor, so that the railing may be assumed.

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to have been placed in position afterwards. Another railing of the same period (Pl. 25) remains along the front of the porch, displaying the initials of the West Indies Chartered Company, 'W G c', in fine ironwork of pure Dutch style. In the wall that supports the front of the porch is an iron door (Pl. 27b) of probably somewhat earlier date, at the mouth of a cell in which men under arrest were kept.
in 1774. Built into the wall of the terrace stands the marble tombstone of Jacob Lambert van Tets, a high official who died in 1758.

In 1774 Bombardier Trenks drew an admirable set of plans of the castle - the first since the week of its capture, nearly one hundred and thirty-seven years before. His plans show the various buildings at whichever level he found most convenient at any particular spot, and only rarely do they mark an underlying building (by means of broken lines), but the accompanying key invariably states what lay above or below the chosen level; it also explains the use of every room, and often specifies the occupant. In general, the arrangement followed the same principles as in the more distant past. The ground floor throughout was virtually reserved for storage and for the prisons of slaves awaiting export. The top storey of the rectangular block comprised the two halls, the chapel, and offices or living-rooms for the administrators; Europeans of less importance resided on the middle floor, or above the sides of the great courtyard. But the reconstruction of roughly a century earlier had, of course, both improved and augmented the accommodation everywhere. The Governor still had his bedroom in the south tower (under the Council Chamber), but his lodging also included the upper two of the adjoining four storeys in the great courtyard. Next, in the two-storeyed portion, came the doctor, and then 'the small Soldiers' Lodging'; the larger lay opposite, across the courtyard, and communicated with a little room shared by the corporal and the armourer. Trenks lived in a similar room beyond them; it was entered from a stair-passage, beside the east bastion. Across the passage (under Prempeh's Tower) was the night-guardroom, where its predecessor had stood in Hemmersam's time, one hundred and thirty years before. The hospital occupied the long next room, at the back of the seaward curtain; no cooler or more airy position could have been found (P1. 15).

An encroachment upon the inner courtyard cannot have been built long before 1774. Along the north-west side, Trenks marks the row of three tall arches, with low relieving arches above them (P1. 33), that supports an external, roofed passage between the Governor's hall and the chapel; one of the chapel windows was converted into a doorway for the purpose (P1. 32a). The roof of the passage cuts across one of the triangles in projecting brick that decorate the chapel wall (P1. 33a).

THE DUTCH PERIOD (1637-1872) At some later date, probably soon after 1774, the passage was continued, though at lesser width and without a roof, along the south-west side, to connect with the Governor's lodging; on this section the full height is attained by a single arch (P1. 30b). A brick parapet, with lancets, runs along both sections; at the corner next to the lodging it is carried over a wooden projection which widens the approach. Trenks's plan of the riverside yard (Fig. 9) proves that one of the Portuguese buildings, the magazine, had been demolished, and the

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FIG. 9 Elmina Castle. Plan of Riverside yard, Feb. 1774
i Stair down to ditch 2 Assistant foreman's lodging
3 Room
4 Powder magazine 5 Assistant's lodging
6 Storeroom
7 Hearth 8 Smithy 9 Bench :o Artisans' lodging I Artisans' workshop
Latrine
13 Baker's oven 14 Floodwater drain 15 Shelter 16 Charcoal 17 Pigs 18 Kitchen
i9 Carpenter's shop 2o Kitchen 21 Larders 22 Poultry 23 Latrine and urinal 24
Outer bank 25 Compass
Larder
Passage Closet
Commodore's lodging Storeroom Disused powder magazine Draw-well of cistern
Old stone pillar carrying wooden dovecot Stair to river Stair down to cistern
a 6-lb. iron gun b x2-lb. brass gun
C 2-lb. iron gun d 8-lb. iron gun

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other, the chapel, had been rebuilt to make a flat-roofed storeroom (which the
British again rebuilt with an outer wall of concrete), while a whole series of
buildings had been added since the plan of 1637 and the engraving of 1704; they
stood beside almost every other portion of the surrounding walls. The longest,
however, must have been only another reconstruction, this time of a very early
Dutch building, as is known because a view from across the river, drawn in 1640-4
(P1. 8b), showed a ridged roof behind the curtain-wall; it appears again on the
engraving of 1704 (P1. I 3a). Here, too, a flat roof was substituted, and that may
have been the main purpose of the reconstruction in either case. The new
buildings represented by Trenks were likewise flatroofed. By 1774, in fact, the
means of defence had been changed from a wall-walk to a series of roof platforms
level with the base of the parapet. These ran continuously from near the foot of
the west bastion to the 'French' battery at the north corner. They even supported
cannon, though necessarily of small calibre; the parapet contains squat arched
gun-ports interspersed among musketry-slits (usually one port between every two
slits). The roof-edge which overlooks the courtyard is also safeguarded by a
parapet containing lancets. The façades of these buildings are homogeneous in
style, and, no doubt, were completed at one and the same time. The curtain itself
may have been rebuilt much earlier; Dapper's contemptuous allusion to a
Portuguese mud wall implies that the Dutch had replaced it in stone long before
his date of publication, i668, as is likely, considering their fear of being attacked
from across the river. A new parapet might have been added later, and the flat-
roofed reconstructions should be contemporary with it. The earliest possible date
for that programme of work is 1702 (since the draughtsman died before the
engraving of 1704 was made), and probably it began soon after; the style of the
fa-adés appears incompatible with any advanced stage in the eighteenth century.
A much altered pair of rooms (Fig. 9.i0,i i), backed against the 'French' battery,
appears to have been architecturally similar. But a later date is plausible for a very
large and tall building (i 9) on the opposite side of the courtyard, attached against
the north-west curtain of the rectangular block. Although the existing doors and
windows do not suggest any great difference in age, the end towards the bay (as
de Marre'e has depicted it) was of complex design, with a scroll of foliage on the
pediment. The name 'The New Building', which appears on the plan of 1774, fits
that supposition, but need not imply very recent construction. Each of the three
storeys contains a single well-lit room of forty-eight feet six inches by twenty-one
feet, evidently for workshops of several kinds, one above the other. Each group
was liable to be displaced when some other had

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a greater need for space; the carpenters, who had occupied the ground floor in
1774, were moved within the next dozen years to a workshop opposite. The entire
yard was reserved almost exclusively for manual occupations, apart from the
supervisor's lodging and two storerooms, which may have held materials needed
by the artisans. One of these buildings had blocked the Portuguese stair into the
outer ditch, and the existing steps (i) had already been substituted. Upon the
'French' battery stood the gallows, and (at any rate in 1802-4) the whippingpost.
Several sheds and oddments marked by Trenks, as well as the kitchen (18), have
since been demolished.

When Trenks drew the fortifications of the castle he marked the position of every
gun, noting its calibre and metal; iron soon corroded, whereas the brass cannon
remained in perfect condition, as an English officer remarked with envy. The
medium-sized cannon on the 'French' battery and the adjoining lower battery (Fig.
9a) commanded the rivermouth and the bay shore, while the small guns on the
roofs of the yard

(c) were adequate for short-range defence. The yard was overlooked by two brass
twelve-pounders (b) on the west bastion, intended to fire across the bay, and by a
pair of iron six-pounders (a) on the north bastion, to command the far bank of the
river. Towards the ditch, the west bastion was armed solely with brass guns (one
eighteen-pounder, four twelve-pounders and one six-pounder). One embrasure
pierced the base of a staircase (P1. 36b), from the top of which a bridge led to the
treasurer's lodging behind the open wall-walk (built over in 1940). On the beach
face of the north bastion, two brass guns (a twelvepounder and a six-pounder)
accompanied four iron six-pounders. On the south bastion there was a small
kitchen overlooking the ditch, and a polygonal sentry-shelter on the apex. All the
guns here were of brass

- on the south-west face only two eighteen-pounders and a twelvepounder, but on
the south-east face two twenty-four-pounders, three eighteen-pounders and an
eight-pounder. There was not even an embrasure on the flank to command the
exterior of the seaward curtain, which at that time was still recessed between this
and the east bastion. But a pair of iron two-pounders on the east bastion pointed
along it. Next, looking out to sea, were two brass guns (a twelvete- and an
eightpounder), followed by two brass and six iron two-pounders, for saluting
ships. The apex bore a polygonal sentry-shelter. Towards the mouth of the bay,
there were ten more saluting cannon of iron (three two-, five three- and two four-


pounders), and then a brass twelve-pounder beside the next corner, beyond which an iron three-pounder commanded the front of the beach curtain. Beside it stood a four-seater latrine and the 'powder magazine for daily use' - the main stock of powder was kept.

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behind the base of the south tower. The shore battery below the south bastion was equipped with two brass eighteen-pounders towards the open sea and an iron twelve-pounder towards the west.
The Dutch had ceased, by 1774, to keep guns above the main entrance; defence was provided, more efficiently, at a distance. Immediately outside, the bridge across the inner ditch consisted of a fixed gangway except at the outward end, which could be lifted; the gantry of this drawbridge stood above a pier of masonry. The floor of the ditch is partitioned here by a cross-wall, which must have already existed by 1774, because only the shorter portion of the cutting, which ends against the west bastion, was still dry, and the remainder then held brackish water, derived from a spring (now sealed up) at the seaward end. By 1799, however, the ditch was again dry for its entire length, as it had been at the beginning of the Dutch period. As for the bank of rock between the inner and outer ditch, by 1774 it had been treated altogether in the present manner, with a low inward wall as well as that on the outward side, which alone can be seen on the engraving of 1704.

In the Anglo-Dutch war of 1780-5 the British attempted to capture Elmina, and a frigate bombarded the castle with twenty-four-pound cannon balls, which (so de Marr'e was told in 1802-4) penetrated the defensive masonry only to their own thickness but caused damage to inner buildings. The Dutch then strengthened the defences against the open sea, and Trenks drew yet another plan (Fig. 10) to show the alteration, after its completion in January 1783. The seaward curtain had previously been recessed between the east and south bastions, leaving 'not more than six feet clear' between the parapet and the hospital (the other side of which overlooked the great courtyard); the interval was now increased to nearly twenty-four feet. The new front, of brick, was made slightly shorter than the old curtain so as not to overlap the corners of the bastions, to which it was joined by slanting flanks, just wide enough to hold an open embrasure. The curtain was thus converted into a most formidable battery (Pl. 15, foreground). The work took over five months, and included minor changes to the tops of the adjacent bastions. A row of bricks projects, level with the platform, along the battery and the nearer half of the east bastion, and is the only example of a string-course on the exterior of the castle. The wide parapets with their single-splayed embrasures belong to a type not hitherto represented; it allowed the guns to fire at a steeper angle (and so to a longer range), as well as more to the side. When Trenks drew his plan of the battery, the seaward faces of both bastions had also been given parapets with similar embrasures, in replacement of the mere curbs shown in 1774, and the landward face of the south bastion must
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very soon have been altered to match, because the embrasures of the new type appear on a plan ascribed to 1786; only the flank that overlooks the ditch has been allowed to retain the old-fashioned arched ports. According to this plan, the shore battery below had already been modernized, with six embrasures instead of the three ports of 1774, but its parapet has now been reduced in height (P1. 17b). The more distant sides of the east bastion were still edged with a curb, as in 1774; eventually they, too, were supplied with similar embrasures, built of stone. At the time, probably, when the new curtain-battery was completed, the guns on the bastions were rearranged and to some extent replaced; the spray-laden winds which blow from the sea all through every night, and the wave splashes which occasionally reach even this height, would have rotted iron very quickly. Salutes were now fired exclusively on the east bastion, from seventeen small iron cannon, but, says Trenks, 'in case of need, two iron cannon of twelve and eighteen pounds are in readiness to be used here'.

No old plan marks the down-pipes of Dutch brick which are placed against the east and south bastions (Pis 15, 16), but the relationship with the parapet suggests that these too belong to the 1780s. The shape, which externally is oblong at all levels, is identical with that of a Portuguese example in the inner courtyard. There must altogether have been over a dozen such pipes, most of them being needed to conduct rainwater from roofs to the various cisterns, but nearly all have been either abolished or replaced in cast-iron. One constructed of Dutch bricks remains on the landward face of the west bastion; here a tall parapet, containing closed gun-ports, was cut lower some time between 1702 and 1774, but the drain might conceivably be older. The construction of quays along the river may have started towards the end of the seventeenth century and been completed towards the end of the eighteenth century (although an engraving based on information of 1802-4 shows them unfinished). As early as 1727, William Smith noted that he landed at 'a fine quay' According to an engraving of 1704 (P1. 13a) and a plan of about 1780, the bank outside the castle was artificially straightened and retained, from the bridge emplacement to the mouth of the river, and on the plan a wide flight of steps leading down to the water is also marked; the far bank still remained in a natural condition. No change is perceptible on a plan ascribed to 1786, except for the addition of a small building near the end of the quay. But a plan of 1799 reveals that the retaining-wall had been extended into the bay, making a jetty, and...
another such wall on the far bank ran from the bridge to nearly opposite the jetty. Twin buildings had also been added on either side of the steps to the riverside court; these were backed against the curtain-wall, a position which indicates that precautions against hand-to-hand attack were relaxed.

The seventeenth-century wall between the ditches seems to have been regarded, towards the end of the eighteenth, as an obsolete means of defence. The efficacy of the musketry-fire depended on there being no barrier along the outer edge of the ditch; consequently the palisade which had stood there must have been removed as soon as the wall was completed, but another obstruction now arose in its place - a solid parapet, not so tall but high enough to make a crouching enemy invulnerable. A plan of about 1780 suggests the existence of the parapet, another ascribed to 1786 does so more forcibly, while one of 1799 leaves no doubt whatever. Since the only benefit obtainable from the parapet was to save men from falling into the ditch, there can no longer have been much expectation of attack at close quarters, against which danger the wall between the ditches had been required.

The seventeenth-century bridge had been replaced, again in wood, at a site some eighty feet upstream. By combining the evidence of plans ascribed to 1780 and 1786, we learn that there was a single central pier, a fixed gangway spanned the half nearer the castle, and the other half could be lifted. The bridge also appears in an engraving (‘Clarence Print’) of 1806, and, irreconcilably, another of 1818, which may be based on a sketch of 1802-4. Whereas the Dutch had previously nothing to maintain on the farther side except Fort St Jago and the garden, the plan of 1799 marks three or four buildings between the river and a fork where the track diverged to the Fort; a 'Roman Chapel' stood on the present main street just beyond. The track to the Fort no longer bent but climbed straight up the hill, so steeply that it would probably have been too slippery for use in rainy weather unless it had already been surfaced with the existing paving of Dutch bricks (Pl. 29). An avenue of trees shaded the road from the foot of the slope to the Fort, according to plans ascribed to 1780 and 1790 (but another plan of 1780 and that of 1799 omit the trees, perhaps only because of unconcern with such things). This is almost certainly the avenue of very aged trees which still survives (though with many gaps); it is composed of Thespesia populnea, a flowering tree of Asiatic origin. The plan of 1799 also shows the valley behind St Jago filled with gardens, some containing little pleasure-houses; one bore the name of a Governor who had held office five years earlier, another belonged to the then Governor, and larger areas were divided into individual holdings. At the western end stood a pavilion called the Beekenstijn or Bekenstein, overlooking a bend in the river; de Marre'e, who resided at Elmina in 1802-4, gives the date of construction as 1792 or i793. His book contains a general account - too long to quote - of these pleasurehouses and other Dutch buildings in the neighbourhood of St Jago, and also refers to a five-acre 'country garden', more than half a mile distant, adding a list (supplied by the gardener) of the plants grown there. The site
is known because one of the buildings, the 'Flag-tower', as he calls it, still exists (and, after some repairs, is in good condition). It is a cylindrical watch-tower, stone-built except for a brick parapet, with the usual lancet openings; a ladder inside must have led to the wooden upper floor and another to the roof, which commands (as de Marre remarked) a very extensive view. Two rather unsatisfactory clues to the date are obtainable. One is de Marr'e's statement that only eight or ten paces from the tower was a work of Governor Bartels (1798-1804), 'a very good building built as a garden- or pleasure-house, consisting of a large hall and two adequate side-rooms equipped with all necessary conveniences', but decay had become far advanced within three years. A vaguer piece of evidence is that of the mouldings, which cannot be much older than 1800, on a pair of stone gate-posts, a hundred yards away, presumably at the entrance of the garden. (One of the posts, which was about to collapse, has now been rebuilt in a different position in order to widen the drive between them.)

De Marr'e's criticisms of Elmina may be taken as authoritative, because he had lived there for nearly three years in an official capacity. The dwellings in the castle are not very convenient, except for

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Government House and a few others. The white and mulatto occupants numbered 'about 150', so the lodgings must have been seriously overcrowded, and we may ascribe the frequency of deaths among newly arrived Europeans partly to that cause. The slaves were kept on the ground floor, in vaulted rooms such as were also used for storage; diseases must therefore have spread even more rapidly among them. But, in accordance with the ideas of the age, de Marre attributes the unhealthiness of the castle to bad air. He explains that stifling heat rose from the ground in the courtyard, which was so enclosed that the breeze could scarcely enter it, and, since the African town lay to windward, along the peninsula, the air arrived polluted. Some of the houses were placed too near the castle; the guns on the bastions, however, could fire unimpeded over the low roofs. The inner ditch had, till recently, 'continually held putrid, stinking water, the exhalations of which were very harmful to the garrison, for which cause it was afterwards dried out' - actually before 1799; since the whole ditch had originally been dry, there is no means of dating the drain, which emerges at the foot of the low battery beside the shore (Fig. i i a). The outer ditch still contained 'rain-water fairly good to drink' The building at its seaward end had 'in former years served as a kind of theatre, where the gentlemen from the castle diverted themselves', but of late everybody had been too busy. Duties may well have become more stringent with the reorganization necessary in 1792, when the Dutch Government took over the Company's administrative activities.

The ordnance in 1802-4 consisted of eighty-four cannon, and some mortars, howitzers, etc. The seaward end was so well supplied with brass twelve-, eighteen- and twenty-four-pounders that no warship could again bombard the castle with impunity. But the danger of attack by land aroused misgivings; whereas, a hundred and twenty years earlier, Barbot had felt some doubt whether Fort St jago constituted a greater menace than safeguard, de Marr'e unequivocally
recommended its demolition. His book, however, was not published till the Dutch had already committed themselves to a sounder, though very costly, solution of the problem (as will appear later).

In the interior of the castle the Dutch made alterations after 1799 probably, in view of de Marr6e's silence on the matter, either in 1800 or soon after 1804. This was the addition of a colonnade outside the Governor's hall (Fig. 1 lc.26; Pls 18, 29, 3oa). The site was a strip, seven feet wide, which ran all along the south-west side of the rectangular block, and had probably originated as the top of the medieval curtain-wall. Here the drawing of 1640 (Pl. 13b) shows a wooden veranda or something of that kind. The Dutch soon removed it; on an engraving of 1704 the actual wall of the hall is seen completely exposed apart from an ornate porch or balcony near the centre. In 1774 the hall could be entered through a 'covered balcony' which was so placed and is known (from another of Trenks's plans) to have also projected over the wall-walk outside. The balcony intersected an open passage, or rather terrace, to which steps led up from the west bastion; at the other end a latrine was backed against the south tower. The apparent wall represented along the edge of the terrace was presumably a mere parapet, not much taller than the continuous base upon which the row of columns now stands. The colonnade is longer; it continues above the bastion, upon which the terrace had not encroached, and returns to the corner of the hall. The columns support segmental arches except across either end, where the span is so much shorter that a pointed arch had to be used. The masonry above is smooth-faced up to a band composed of alternate projecting and recessed panels, which is overhung by the eave of the roof (a modern replacement, with a lower pitch than the Dutch roof). The whole design is clearly Italian by inspiration. The shape of the columns is a modification of the Roman Doric form, while the row of panels is a shallow version of the bold Doric frieze, and in either case there were Italian precedents for the adaptation, as well as for the arches. In Holland such features were occasionally used around 1800, under the influence of Vignola, whose style is reflected in the colonnade. But when Napoleon's brother became king, in 1807, he demanded buildings in the French manner, which involved correct imitation of ancient Roman detail, and by sending Dutch architects to study at Paris and Rome he quickly changed the national taste. The colonnade, therefore, can scarcely have been built after his reign, nor during it, when the Dutch tenure of the castle was precarious (depending on a half-hearted agreement with their British neighbours that each party would refrain from hostilities). The latest plausible date of construction, therefore, is 1806. But on the plan of 1799 the balcony is shown, and de Marr6e would almost certainly have mentioned the colonnade if it had been added during his residence, February 1802-December 1804.

A monument in classical taste forms the centre-piece in a Dutch cemetery, a couple of hundred yards beyond St Jago hill. The tall square tomb (or, perhaps, cenotaph) is flanked at the corners with square piers, ornamented with classical mouldings, and from it rises a tapering pillar reminiscent of an obelisk, topped by
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In 1807 Britain, following the example set by Denmark, declared the slave-trade illegal, but Holland continued it for some years. Meanwhile the Africans of Elmina incurred the hatred of the other coastal peoples by improving their relations with the Ashantis, who were then determined to conquer the coast; an open alliance developed, which was tacitly supported by the Dutch. The Ashanti attacks would in any case have resulted in a welcome supply of slaves, since the invaders could sell their captives nowhere else, but in addition the inhabitants of Elmina caught fugitives to sell to the Dutch, who ultimately found they had ruined themselves in return for this small profit. The victimized tribes attempted to capture the town in 1809, and their hostility persisted throughout the remainder of the Dutch period, though the continuance of Ashanti pressure left them few opportunities to indulge in battles of their own choice. The Dutch, of course, could not avoid responsibility for defending the town, and did so by a means which also secured their hold on Fort St Jago: they placed a ring of batteries on the outskirts. The two earliest were constructed in 1810-1, two more in the middle of the century, and another in 1868-70, when, too, the rest were rebuilt. Their armament included guns, cast at Liege, of a much greater length than any supplied to the castle or to Fort St Jago (to both of which some examples have recently been transferred). The iron name-plates of two of these batteries, Fort Java and Fort Schomerus, are preserved in the castle (affixed to walls in the entrance and at the south corner of the great courtyard respectively). The sites are barely distinguishable; one was on the hill behind St Jago, where the convent now stands, another on the river bank to the west.

The expense of maintaining the outlying batteries and a larger standing army, at a time of diminishing trade, involved the Dutch in heavy annual loss. It is, therefore, not surprising that after the addition of the colonnade they scarcely altered the castle. Two pieces of brickwork outside might be later than the beginning of the nineteenth century. The path from the river, according to a plan of 1786, went up the slope by means of thirty wide steps, but now does so by a ramp, paved (like the path up the hill of St Jago) with bricks; they give sufficient foothold to dispense with steps. This paving continues to the drawbridge, and in the last, flat section lies a block of marble, traditionally said to mark the spot where the Dutch received the surrender of the castle by the Portuguese. The block is flat only on the upturned surface, roughly dressed on the sides, and most uneven at the back, though nowhere less than one foot thick; a round depression on the upper face, close to one edge, looks as though it had been cut to receive a bolt, so that the block may once have formed the threshold of

THE DUTCH PERIOD (1637-1872) a doorway. To the south, a square curb surrounds a huge compass laid out in Dutch bricks, pale and dark colours being
contrasted to distinguish the points; ships' captains are said to have checked their navigation compasses by it (as presumably was the purpose of compasses carved on rocks in Greenland and Scandinavia). One might think that a feature of this size would surely have been marked on the late eighteenth-century plans had it already existed, but a predecessor in the riverside yard is shown only by Trenks (Fig. 9.25). Another such compass may be identified on a drawing of Keta (P1. 4b).

In 1872 the Dutch sold all their possessions on the Coast to the British Government. The castle, when handed over, was in good condition. Some minor features have since been cleared away, but British works of reconstruction usually kept fairly closely to the former outlines and the only really major alteration to the historic buildings has been an extension above the north-west curtain of the rectangular block. The most conspicuous traces of the British occupation are the sheds outside the enclosing walls. Otherwise the castle still looks much the same as when the Dutch left it. But outside there is a great open space instead of the town, which was destroyed in 1873. The Dutch bridge had been replaced by one constructed on very different principles. On the far side of the river, the skyline of Fort St Jago is confused by British additions, but along the bay some large houses built under the Dutch have not yet fallen into utter ruin, and the Dutch Reformed church is well maintained, though renovated; it was completed a few years before the British took over, and then transferred to the Methodists.

I The slab has been coated with plaster and whitewash whenever the south tower, in which it is set, has been decorated; the lettering has, therefore, been picked out in paint from time to time, with the result that it has been confused, especially in the last line. The text can, however, be restored with almost complete certainty as: ILLUSTRISSIMO AC GENEROSISSIMO MAVRITIO NASSOVIAME COMITE BRASILIAM GVERBANANTE KOINIO TRIDVNO IMPERANTE OCCVPATA FVIT VI HAEC FORTISSIMA ARX QUA TRIDVO ANNO MDCXXXVn DI XXVIII AVGVSTI 'While the most distinguished and noble Count Maurice of Nassau was Governor of Brazil, this very strong fortress was taken under the leadership of Colonel van Koin on the third day of attack, the 29th of August in the year 1637.' That the day was recorded as the 29th is confirmed by Hugh Thomas's translation, published in 1946 when the carving was comparatively legible, and by de Marr-'e's ignorantly faulty transcription of 18o2-4. The Brazilian archives of the Dutch period indicate that the Portuguese surrendered on the 28th, but the 29th is the date given by all other sources, and should probably be accepted, since the inscription reads like a contemporary memorial.

2 The arms might have belonged to a Coutinho de Marialve or Tavares, a Kleyn van de Poll, van de Venne or Wolffkeyl (as Sir James Mann has kindly informed me).

3 Stone foundations of houses can be seen near the castle, and along the Atlantic shore. Some of the latter are constantly splashed by the waves; the land must have
subsided. But as long ago as 1668 the streets were liable to flooding by spring tides,

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(Fig. i i omits British additions)

Visitors to the castle usually approach it from the north, crossing the river by the modern bridge; the site of the latest Dutch bridge lay a few yards downstream, and the quays from that point to the sea, along both banks of the river, may retain some of the original masonry (dating, on the north bank, from about 1790, but on the southern, a century earlier). The nearest piece of the castle wall was built by the Portuguese (not appreciably later than 1520-50) in order to block the end of the
outer ditch and so to convert it into a reservoir; the remainder of the wall, towards the sea, seems to be a Dutch replacement (of soon after 1637) of a Portuguese predecessor, but the parapet was rebuilt early in the eighteenth century. The far corner, where the wall turns along the beach, is occupied by a platform of late Portuguese origin but rebuilt in 1637-8 by the Dutch, who called it 'the French Battery'.

Straight ahead from the river, a brick path (paved not long after 1786) ascends the slope beside the parapet (late eighteenth century) of the outer rock-cut ditch, which must have been begun in 1482 and was certainly complete at its present depth some forty to seventy years later. The wall visible on the inner side of the ditch may be either Portuguese or a Dutch replacement of the seventeenth century, but the parapet was rebuilt early in the eighteenth; an outward bend, made to leave room for a passage beside the huge west bastion, marks the junction with a lower wall of the late seventeenth century, which turns and runs parallel with the face of the bastion. This end of the bastion is a Portuguese addition of the early seventeenth century to a smaller bastion of the late sixteenth, but the top was slightly raised in 1646 and the parapet towards the river may be of that date; on the nearer face it was reduced to a curb between 1702 and 1774, but a conspicuous down-pipe of Dutch bricks need not be of that period. After passing in front of the bastion, the low wall - here datable between 1682 and 1702 - continues as the outward defence of an enclosed bank of rock between the outer and inner ditches (both of which formerly contained water); the latter, another work of 1482 or soon after, begins against the flank of the bastion. Behind it rises the south-west curtain-wall of the rectangular block - not the original wall of 1482 but a thickening added approximately a century later; a colonnade of about 1806 stands above the original wall, outside the top storey of the block. The curtain and the colonnade alike end at a polygonal tower, the upper half of which was built at or shortly before the middle of the seventeenth century, while the lower is merely the casing, of that period or earlier, to a round tower of 1482; inset in the masonry are a coat of arms and a Latin inscription recording the Dutch capture of the castle.

The two ditches continue towards the sea, still separated by the walled bank, and can be crossed by means of wooden bridges. The drawbridge over the first half of the outer ditch is a British replacement on the site of Portuguese and Dutch predecessors, which could be lifted in the same manner. The ornate gateway in the wall between the ditches must have been built towards the end of the seventeenth century. The fixed gangway over the inner ditch was formerly entered by a second drawbridge, the support for which remains below. Partitions in the two ditches enabled each to be divided into a wet and a dry section - four hundred years ago in the case of the outer ditch, but the existing remains appear comparatively recent. The bridge ends at a rock platform (lined with a modern parapet in antique style instead of the wooden railing shown in old photographs) outside a Portuguese gateway, built shortly before 1637, over which the Dutch soon inserted their own national emblem of the lion. The flat roof of the gateway...
is enclosed by a parapet, with small oval gun-ports of late Portuguese date. This outer gateway projects from the main wall, the face of which had probably been added late in the sixteenth century to thicken the original curtain of 1482. This is the curtain-wall of the great courtyard; the parapet has been modernized. Above it, recessed to the line of the original exterior, are seen rows of upper rooms added at different periods. These, like the curtain itself, continue as far as the south bastion, where the ditches also come to an end.

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Behind the projecting gateway stands another, a Dutch reconstruction of the outer gate of 1482, at the entrance of a room which must still be largely Portuguese, as likewise is a corresponding room above the wooden ceiling. In both gateways Dutch slots for wooden bars and bolts are preserved, but no door was placed in the Dutch brick frame of an inner archway, which gives on to the great courtyard. Seen from the courtyard, the Portuguese two-storeyed frontage is marked off by a setback from two additional storeys, which were superimposed late in the seventeenth century; they formed part of the Governor's lodging. The next two rooms towards the sea are entered by ornate doorways of that period, and one still retains an iron door which cannot be appreciably later; here again, two more storeys were superimposed, probably early in the eighteenth century. An adjoining buttress, and a short extension of the upper storeys, were added by the British two hundred years later. The remainder of the south-west façade consists of only two storeys, in which no Portuguese work can be recognized (though a good deal may exist in the lower portions); none of the doorways, windows and internal vaulting is likely to be older than the last quarter of the seventeenth century, and the entire building seems to have been completed in its present flat-roofed form during the first quarter of the eighteenth.

The seaward end of the courtyard is occupied by a similar flat-roofed two-storeyed building, upon either end of which rises a single room (the eastern being known as 'Prempeh's Tower'); the work is wholly of the early eighteenth century. The Portuguese church, of approximately 1598, stands with its back attached to the middle of the Dutch building, and the angle at which the pitched roof met the wall is outlined on the parapet. The front of the church is striped with four upright bands of Portuguese brick, engaged in the stone wall, but all the doorways and windows throughout the building were altered or inserted by the Dutch, in the mid-seventeenth century and on subsequent occasions. A gigantic fireplace and chimney, built in 1645 for the kitchen of the lower ranks, are placed against the exterior of the north-east wall. The interior was remade by the Dutch, at some unknown date before 1774, with an upper floor, a staircase, and partitions on both levels; a wooden frame containing two doors, which stands upstairs, was carved in the middle of the eighteenth century.

The north-east side of the great courtyard was rebuilt before 1682 with the present two storeys but a ridge roof; the flat roof was substituted before 1727. A large buttress in the court is a British addition. The parapet along the curtain has been modernized. The wall is propped externally by two Dutch buttresses (one of
extraordinary length), built certainly before 1704 and probably before 1682. The lower part of the

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defences is largely cut in the rock; a shelf along the outside corresponds with the level of the courtyard and indicates that a flat surface was made right across before the builders put up the original walls in 1482.

Near either seaward corner of the court a staircase leads up through the buildings to a walk along the top of the curtains, beside the frontage of the upper storeys. The adjacent platforms of the bastions stand at the same level, to which they seem to have been raised by the Dutch. The bastions originated late in the sixteenth century, and were enlarged shortly before 1727; a pair of arched gun-ports on the southern bastion, facing the ditch, must have been preserved from some such time, but the open embrasures were built in 1782 and following years. The short curtain between the bastions was extended outwards in 1782-3, to make a battery. A brick down-pipe on each bastion is probably of the same date or not much later. At the foot of the south bastion are Portuguese outworks, probably of about 16oo, intended to command the ends of the ditches. They consist of a slightly elevated battery along the shore, a small open space behind, and a room on the landward side. The parapets were rebuilt by the Dutch (about 1780 in the case of the battery).

Across the opposite end of the great courtyard runs a terrace, built shortly before 1665, in front of the rectangular block. The face of the terrace is cut by wide flights of steps on either side, and between them stands the epitaph of a Dutch official who died in 1758. The inward corners of the terrace are filled with curved steps, and a double flight in the middle leads up to either side of a porch outside the main entrance. Under the porch front an iron door, not later than the eighteenth century, leads to a vault in which men were kept after arrest. An iron railing on the porch front (incorporating the initial letters of the Dutch Company, 'w G e') and another of floral design, which encloses the balcony above, date from the beginning of the eighteenth century. The façade of the rectangular block, though a good deal of the masonry is likely to date from 1482, was re-designed not long before 1665, and the top was given its present form between 1682 and 1725, when the general effect too was strengthened by concealing a series of large but simple patterns made in projecting brickwork.

At the east corner of the façade is the opening of a passage, vaulted not long before 1665, which leads, after a right-angled bend, through the north-east side of the rectangular block to a small internal courtyard. As laid out in 1482 the open space had been somewhat larger. One wall of that date is concealed behind the narrow vaulted rooms along the south-east side - a Dutch extension. Two other walls stand behind a balcony supported on arches, added along the north-west before 1774, and afterwards also along the south-west. On the north-east side the

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wall seems to have been demolished during the third quarter of the seventeenth century, when an arcade took its place; the space behind is floored with Portuguese bricks. Beneath the courtyard lies a cistern, lined and vaulted with Portuguese brick, and probably dating from 1482; rainwater was conducted to it from the roofs by means of downpipes, one of which, made of Portuguese bricks, still exists (near the west corner).

Although the external walls of the rectangular block may retain a large proportion of the masonry built in 1482, the rooms within were formed by a Dutch reconstruction which began not long after 1650; the ground floor was then vaulted, and a wooden second floor relaid, more or less at the previous level. A great hall, which overlooks the great courtyard on this storey, cannot have been created till 1682-1725, and the extension at the back, encroaching upon the inner courtyard, may be of the same period; the motive was apparently to provide space for a wooden staircase, which the British replaced on quite a different scheme. Here alone has there been any appreciable change in the old buildings, apart from two external additions on the second floor: a colonnade of about 1806 along the south-west side, and a new frontage on the north-west, built about 1840-2. The rooms are generally uninteresting. The Governor's kitchen, near the west corner of the second floor, contains a fireplace and chimney, resembling those built in 1645 for the lower ranks (beside the Portuguese church); all the officers ate at the Governor's table, hence the enormous size. The chapel, on top of the north-east side, is quite plain inside, but the entrance is ornamental and the exterior of the walls were studded with many patterns in brick, such as in 1665 diversified the façade towards the great courtyard; those on the front wall were afterwards concealed (1682-1725), but some at the back have remained visible.

A double staircase descends from the chapel to the north bastion, or rather part-bastion; the original bastion, of the late sixteenth century, was reduced by half and made rectangular in 1640-4. The platform was raised to its present height some twenty years later, and the tall parapet with gun-ports, facing towards the river, is probably of the same date. The parapet towards the beach was already very low in 1774, but may have been cut down earlier in that century. Below, in the face of the bastion, is a partially blocked doorway, lined with Portuguese brick, whereby goods were brought into the castle after being landed on the beach; they were hoisted by a crane and windlass placed on the top of the bastion. The room within is reached through a Portuguese archway from the ground floor of a little square tower, of which only the third storey is now fully exposed (beside the south-east side of the bastion); this tower seems to have originated in 1482 but was largely rebuilt by the Dutch, who enveloped the lower storeys when they vaulted the passage to the inner courtyard and rebuilt the nearest rooms along the great courtyard. The ground floor is entered through the lower of these rooms, the doorway to which opens on the terrace of the great courtyard.
Steps descend from the north bastion to a gateway of roughly the same date as the chapel, to which it is attached. The open passage beyond runs along a breastwork built in 1640-4 around the north tower of 1482; the tower continues above in its original circular form, unaltered except by the Dutch insertion of windows at a different level, but the top, which contains a bell-cage, is a brick addition, apparently of 1665-7. The breastwork, after curving round the tower, forms an additional skin to the north-west curtain, which had already been thickened late in the sixteenth century. The space between the original curtain of 1482 and that of the late sixteenth century was converted by either the Portuguese or the early Dutch into a passage with a wooden ceiling, above which rooms were built, extending the top floor of the rectangular block. About 1940-2 the rooms were extended across the breastwork too, making it into a second covered passage; a staircase was then built on the west bastion, to serve the new rooms. The breastwork had remained open throughout the Dutch period, though the frontage was concealed, about the middle of the eighteenth century, by a three-storey building which rises against it in the riverside yard and reaches to the west bastion, slightly overlapping the junction with the breastwork. The first portion of the west bastion is a relic of the late sixteenth century and projects less than the remainder, which is a Portuguese extension of the early seventeenth century. At its foot stands a gateway, built late in that century, which divides the riverside yard from the fortified passage behind the outer ditch. The riverside yard was enclosed by the Portuguese but in their time contained scarcely any buildings; in the eighteenth century, and probably earlier, the yard was used for a variety of handicrafts, and for keeping livestock and materials. A large cistern underneath the pavement is known to be Portuguese by origin but was rebuilt by the Dutch, perhaps to make good damage caused by their own bombardment in 1637. Partly, no doubt, for that reason, the defences, too, were then rebuilt and strengthened. When the north bastion was rebuilt in 1640-4, the northern half was replaced by a low battery, upon which guns were mounted to command the beach. Some Portuguese masonry may be preserved just beyond the battery, including a small gateway, known to have existed in 1637, from which a wooden stair now leads down to the

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beach (instead, probably, of a former ladder). Beyond the gateway rises a gun-platform, rebuilt by the Dutch in or just after 1637 and then called by them 'the French battery'; it fills the blunted corner where the wall turns to follow the river bank. A building against the back of the battery was added early in the eighteenth century, more or less contemporaneously with the rooms backed against the curtain-wall that overlooks the river; cannon were mounted on the flat roofs. Another such building, which was joined to their far corner, stood behind the ditch; it has been reconstructed by the British. In Portuguese times there had been a doorway through the curtain-wall here, to some steps (perhaps still marked by cuttings in the rock) which descended along the edge of the ditch, towards the wall which blocks the end and formerly dammed up a reservoir of rainwater. A
few feet up in this wall, there remains a stone basin, carved in Portuguese style of the early sixteenth century, into which water could be poured to flow through a pipe (no longer visible) to the quayside; ships' boats used to be sent up the river to fill their barrels by this means. The Dutch kept the device in working order, and when they blocked the Portuguese route, built another flight of steps, parallel with the dam wall. The passage which leads there branches off from a vaulted space amid the rooms behind the riverside curtain, where an older gateway - it existed before 1704 opens above the quay. The modern wooden staircase outside has replaced one whereby the Dutch gave themselves a short cut to the bridge. All buildings along the exterior of the castle are of recent construction.

PART THREE
OTHER HEADQUARTERS

CAPE COAST CASTLE:
THE ENGLISH HEADQUARTERS
(Pls 37-41a)
NE of the better landing-places in West Africa adjoins the headland which the Portuguese called Cabo Corso ('Short Cape'), a name which the English corrupted, nearly three hundred years ago, to Cape Coast. Here a Swedish fort, Carolusborg, was built in 1655. It is said to have changed owners half a dozen times before 1664, when it was captured from the Dutch by a joint English and Danish force; the English remained in possession. Although the fort was allegedly destroyed on that occasion, it appeared strong enough, only a year later, to deter even Admiral de Ruyter, who thought that an attack would be unlikely to succeed before the local allies of the English could set upon him. No doubt the original walls contained mud instead of mortar, and so had been both ruined and rebuilt very quickly.

Some ten years later, the English undertook the building of Cape Coast Castle as the headquarters of the Royal African Company. In this much larger enclosure they seem to have preserved roughly three-quarters of the Swedish fort. In 1682 the officer in charge, Greenhill, drew a 'perspective' or bird's-eye view, engraved not long after (Pl. 37), which represents (as also do later plans) the obvious remains of two small bastions, almost half-way between the presumably English round tower at the north-west corner (behind the flag) and the lower edge. One of them, on the exterior of the castle, had been joined up by a long building to the east bastion (bottom right) which he himself had probably built, since it was afterwards known as Greenhill Point. Of the other, only one face and the beginning of the next could be seen in the courtyard, forming the end of a building which stretched away to the gate-tower. But plans of 1750 and 1756 prove that the remainder of the bastion still existed behind the façade of that building and joined its back wall, which must have been the original south
curtain. The wall ran parallel with the north curtain, part of which is visible on the engraving beside the other bastion. Most of that curtain, however, is 183

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hidden behind a taller inner building (with the flagstaff on the roof), the polygonal shape of which must have been designed in relation to the bastions and curtains. By 1682, though, the east curtain had been utilized to form the back of an English addition, a room which covered the flanks of both bastions; previously there would have been only a narrow wall-walk, like those on the north and south, outside the polygon, which may reasonably be identified as the 'house' of Carolusborg. The west end (at the flagstaff) was straight, and stood beside an open space, which may, in Swedish as in English times, have been entered only from the south. Beyond, at a suitable distance to command the gateway, a remnant of a third bastion may plausibly be found on the reliable plan of 1756 (Fig. 12.9b), though ignored on a rather diagrammatic plan of 1727; the English curtain bent outwards at a slant which would otherwise be inexplicable but is appropriate to the western face of a bastion, the remainder of which should have occupied the site of the English guardroom. If so, the Swedish west curtain would seem to have been placed slightly inwards of the English line.

Barbot's description of the castle in 1682 appears, and should be, trustworthy; moreover, he had visited it once before, three years earlier, before the sea battery was quite completed and while 'the land side' was being rebuilt (partly on a new design, as may be seen by comparing his sketch of 1679 with Greenhill's view; the outer wall is not visible, behind the upper portions of tall buildings, some of which had changed outline by 1682). The castle is situated, in Barbot's words, on a round head jutting out into the sea towards the SSE, and its being encompassed on that side and the SW by several rocks and the sea itself, render it inaccessible on that side (the waves of the ocean continually breaking among those rocks). The only landing is just under the fortress, in a small bay eastward, where the strand is clear of rocks, being a sandy flat, on which the Blacks run their canoes, without danger of splitting. The way thence is along the walls of the castle to the principal gate, looking WNW up to the country. It has neither ditch nor drawbridge before it, nor so much as a portcullis, being only defended by the two round flankers on the landward side, and a small battery mounted with six pieces of cannon.

[The castle is] the largest and most beautiful on all that coast next to St George of Elmina, with four flankers and (on the SE) a large platform, on which are mounted thirteen pieces of cannon, being about eight-pounders, pointing on the road and passage up to it; which can easily hinder any enemies ships anchoring there,

CAPE COAST CASTLE: THE ENGLISH HEADQUARTERS
and the small arms scour all the landing-place behind the rocks that encompass it. On the battlements are ten guns, and twentyfive on the flankers, from a minion to nine-pounders; and on a rock called Tabora, twenty paces from the castle, are four or six twelvepounders in a round tower, garrisoned by about as many men; which
serves to keep the Blacks in the town in better awe, as well as to defend them from all other Blacks their enemies, that come from the inland country; though I look upon this tower as useless, the castle being so high that its cannon may sufficiently secure the town against any attempts of those people.

The lodgings and apartments within the castle are very large and well-built of brick, having three fronts, which, with the platform on the south, almost make a quadrangle, answering to the inside of the walls, and form a very handsome place-of-arms well paved; under which is a spacious mansion, or place to keep the slaves in, cut out of the rocky ground, arched and divided into several rooms; so that it will conveniently contain a thousand Blacks, let down at an opening made for the purpose. The keeping of the slaves thus underground is a good security to the garrison against any insurrection.

The ventilators of this slave-prison are marked on the plan of 1756; some appear on Greenhill's view, along the inward edge of the long south-east battery. A curious continued balcony runs along the buildings of the first storey, with handsome staircases on the outside at certain distances on each front, for a communication between the lodgings of the garrison; and under the balconies are several shops. Next the agent-general's apartment is a large stately hall. There are also spacious store-houses and counting-houses for the factors and other officers; some of which rooms were not quite finished in the year 1682. The then agent Greenhill, my very good friend, was diligently employed in finishing them.

The garrison and other company soldiers amount to about a hundred Whites, and near the like number of Gromettoes [African mercenaries], with their respective officers all clothed in red, and in the pay of the Royal African Company. They are supplied with water in time of scarcity from a large cistern which holds above three hundred tun of rain, gathered in the wet season from the tops and leads of the houses in the castle.

The gardens belonging to the agent and other officers of the 185 castle, are at some distance from it, towards the strand, and full of orange and lemon trees; but have very few plants and herbs. In the midst of them is a square summerhouse for their diversion. Another place, much like a garden, but all planted with coco-trees, is the common burying ground for the garrison and officers. The garden seems to have been extended, or another planted, between 1701 and 1708; the produce is said (1721) to have been reserved for the Governor's table. Smith's map of 'The principal walks belonging to Cape Coast gardens' shows them, in 1727, stretching more than half a mile northwards from the town, to an average width of nearly a quarter of a mile. His text asserts that the extremely irregular perimeter extended nearly eight miles, unmarked by 'any bounds or hedges except on the south side next the town, but in general all is called the garden as far as any regular walks are planted' A description of 1737 confirms that some of the walks were nearly three-quarters of a mile long; they were
planted on each side with orange trees, coconut palms or limes, and 'so artfully
laid out that you receive the wind almost from all quarters of it' Another 'small
pleasure-house' in the garden was built in 1778. Such summer-houses were
needed especially when the officers took food there. Occasionally they gave
parties; an instance is noted in the accountant's diary of 1780: 'The Governor and
all his officers dined with me this day in the garden by invitation' (May 7th).
Between the garden and the sea stood the Danish fort, Fredriksborg, on a lofty
promontory. Though the building itself was of little account, and the armament
weak, the position commanded the castle, 1,000 yards away, and the presence of
the fort constituted a 'very serious danger' - in Barbot's opinion, the sole danger.
But in 1688 the English bought out the Danes. For the next half-century they
alternated between neglect and maintaining the hill as an outpost (named Fort
Royal). Guns were still mounted in 1737 on a reconstruction of the Danish ruin,
but it was finally abandoned soon after. So, too, was the more distant outpost on
Queen Anne's Point.

Another garrisoned outpost, which became known as Phipps' Tower, originated
about 1702, but may have been rebuilt soon after. It stood upon an isolated hill,
1,000 yards north-west of the castle. The tower is said to have been round, and
mounted seven guns, which covered the inland approaches to Cape Coast and
incidentally served to overawe the town; a surrounding palisade and ditch gave
reasonable protection to the occupants, considering the steepness of the slope
beneath. But this little fort also came to be abandoned, more than forty years
before, in

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1796, a stroke of lightning completed its ruin; in 1837, Fort Victoria was built on the same site.

The acquisition of outposts does not seem to have been accompanied by any noteworthy increase in the castle's strength. In 1693-5 Tilleman, an officer of the Danish Company, learnt that the cannon numbered fifty-four; eleven officers, plus a chaplain and two doctors, relied for defence upon two sergeants, three corporals, three armourers, six European volunteers, eighty common soldiers and two drummers; there were also two teachers (training local clerks, no doubt), and then the mulattoes, the slaves and the Christian servants among the natives. A dozen years later, an inimical English trader put the number of guns at forty-two, and of occupants at one hundred and two, including a garrison of eighty-six, but he also declared (regardless of inconsistency) that there were only four officers 'and seldom more than 33 soldiers'.

Strong as the seaward fortifications were reputed to be, they proved hopelessly inadequate in 1703, when three French trading-ships (of about fifty guns apiece) bombarded the castle and in less than an hour forced the garrison to leave the guns and ask for a truce. However, no attempt was made to improve the defences on that side till more than fifty years later. Indeed, comparison with the inadequate plan but admirable views of 1727, and with plans of 1750 and 1756 (Fig. 12), shows no alterations worth mentioning to any part of the castle which had existed in 1682, and only one important addition, a spur on the west side. This is illustrated on an engraving of 1704, but so incompetently that the precise shape cannot be determined; all that can be established is that the walls were much lower than the older defences, and ended in a point (drawn in 1725 as a turret), and that the entrance was situated on the north. The plan is not fully known before 1727 (Fig. 3-1). By 1750 a new and wider spur had been substituted; it now stands externally unchanged (Fig. 12). The high walls lead from the round tower, which has continued to form the western extremity of the castle.

'Stately' as the buildings looked in 1682, their structure was most unsatisfactory owing to the use of mud instead of mortar. As early as 1695 the occupants reported to London 'great defects in the walls and vaults of the castle', and in March 1708 complained that 'there is never a dry room to lie in'; while a statement written at the end of that year is summarized in the words: 'The castle (if not speedily repaired) likely to be washed down by the rains.' In 1709 the Governor strongly advocated the building of 'a slave house' - but we do not know whether it was intended to meet an increase in the permanent slaves (who by 1750 had risen to two hundred and twelve men, seventy-nine women and
CAPE COAST CASTLE: THE ENGLISH HEADQUARTERS

seventy-six children) or in the numbers purchased and awaiting shipment. The underground prison for the latter must, one would think, have been extended between 1682, when it could hold 'over a thousand', and 1750, when it could take fifteen hundred.

The Directors in London must eventually have realized the necessity both of extensive repairs and constant maintenance. A description of 1737 outdoes Barbot by asserting that the castle rivalled Elmina, and remarks that improvements were made by each successive commander. The number of guns rose to sixty-six in 1750. In that year, too, the Governor reported that the castle had been repaired and was in very good condition. But nothing short of a thorough reconstruction could keep it so. Only six years later, an engineer experienced in such matters, Justly Watson, made a careful survey of the castle and reported that there was 'little or no fortification in it', while the twenty-two cannon included some that were at least thirty years old. He described the walls as 'very high but very slender and in a decaying and ruinous condition. A forty-gun ship could reduce this castle in a few hours to a heap of rubbish.' He criticized the outline as a 'very odd and irregular figure'; the site was too constricted and could not be enlarged because the town came so close (along the north), and a fetish rock near the sea had to be excluded. The defences were 'not constructed on any principle of fortification'. In particular most of the potential strength towards the sea had been sacrificed by placing a building behind the south-west curtain not altogether unreasonably, because the upper floor, which contained the dining-hall and chapel and the treasurer's room, got more sea air than any other part of the castle (as a writer of 1737 had observed). Parts of the castle ran up four storeys, consequently the air could not circulate and sometimes became 'very sickly'. Only the slaves used water from the cisterns, to which rain was conducted from the paved areas as well as from the roofs; the other occupants relied on ponds in the garden, a quarter of a mile away, and could not avoid sharing them with the townspeople.

The Committee of Merchants, which in 1751 supplanted the Royal Africa Company, made great efforts to remove or ameliorate these faults and drawbacks. Gradually every weak piece of the old structure was rebuilt, using good lime-mortar and, no doubt, replacing the ill-baked local bricks; the fortifications, too, were immensely strengthened, especially towards the sea - from which the French had again attacked in 1757. Broadly speaking, the work seems to have been started at the west end, continued on the south and east, then along the north, and terminated with a reconstruction of the south-west round tower. Within twelve years of Watson's report, the spur had been converted into a most formidable battery by building a row of vaulted rooms backed against the wall, and mounting cannon on the roofs. The heaviest guns pointed, of course, towards the sea; twelve eighteen- or twelve-pounders stood along that side, and some of the eight guns on the tower at the west end could be aimed in the same direction. All the rooms on the south were used as soldiers' barracks, as also were some on the north; the rest of the north side was divided between rooms for

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artisans and a 'prison for criminals' A parapet, containing the usual lancet openings, ran above the courtyard wall and supported an ornate bell-gable behind the west tower (carved with an almost illegible date, probably either 1771 or 1774). The design of the gable (Pl. 40) was antiquated, and apparently inspired by the brass escutcheon of some piece of furniture, perhaps a century older; the bell hung in a gap corresponding to the key-hole!

In 1768 the round towers at either end of the old west curtain remained as before, purely military in character, and carried five guns a piece. But the curtain itself had already been demolished, together with the two-storeyed building at the back, and replaced by the present three-storeyed block; officers lived on the lower and middle floors, and the third contained the Governor's rooms and the hall. Probably the old combined hall and chapel on the south curtain had already been demolished. Alternative designs by two officers were now (l768) submitted to London for a southward extension of the castle; the scheme actually adopted was that of John Grosle, or Grossle (Fig. 13). It involved the construction of a huge battery, facing out to sea, with a demi-bastion at each end to widen the arc of fire coastwise; there was space for thirteen guns. A ramp leads beneath the platform to an enormous vaulted slave prison of several bays, doubtless more wholesome than the former prison under the courtyard and the south-east battery; remains of iron in the walls seem to represent the fittings for tiers of bunks, as in the crews' quarters of a ship. A second incidental advantage was that there was room to extend the old south-east battery to meet the new work; three more guns could be added to the previous twelve (all of which were either eighteen- or twelve-pounders). A third benefit must have resulted from the destruction of the tall south curtain and its replacement by the battery, in that the wind off the sea was no longer blocked from a large part of the courtyard and the residential buildings beside it.

The oldest of those buildings, however, were on the verge of collapse. The rooms against the courtyard wall of the Swedish fort, and the warehouses inside it, had reached that condition in 1768. But their demolition, and perhaps even the construction of the south battery, may have been postponed in order to undertake urgent work at the east end of the castle. For in September 1767, the east face of Greenhill Point fell down, and the guns on the platform had to be removed to prevent the whole bastion falling with their weight. Presumably the present bastion was built not long after.

The rebuilding of the north curtain began in 1773, and the last remnants of the Swedish fort disappeared in the process; so, too, did an almost indefensible minor gateway towards the east end. Instead, a
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A strongly fortified gate was built immediately south of the east point, and its completion in 1777 was soon followed by that of a residential structure close by. For these stages of the general reconstruction there is much scrappy documentary evidence, which must be considered. In 1773, sixteen years after Watson submitted his damning report, every part of the castle was officially asserted to be 'in good repair, most of it being new', but at least three more years' work was estimated for completing the rebuilding. At the time, the north curtain was being not merely straightened but replaced; that side of the castle was 'now entirely open' and indefensible. The new curtain contained no equivalent to the 'water-gate' which had opened just west of Greenhill Point. Instead an archway, afterwards known as the sea-gate (Pl. 4ia), was constructed at the eastern extremity of the castle, between the replacement for Greenhill Point and another new bastion, which projected from the re-shaped end of the long south-east battery. Outside the new gate is a terrace, from which steps and ramps lead down to the beach. The date is recorded of that piece of work alone - obviously the final part of the programme; in February 1777 the Governor's Council decided that there was need for 'a small parapet to be run round the outwork before the lower gate, to prevent people from tumbling down, and the whole to be plastered to protect it from the sea and heavy rains', also that to save the steps from wear, skids should be made for rolling up casks 'on one side the outwork of the lower gate'. The parapet of this outwork 'before the new and lower gate' was actually begun on July 26th. On July 10th, bricklayers had begun to finish 'Mr. Grossle's bastion', in accordance with another resolution taken at the same Council meeting; five guns were to be mounted on this work, which should perhaps be identified, not with the south battery which Grossle had designed nine years before, but with the new bastion flanking the sea-gate. Fourteen months later, workmen were 'new-laying the pavement of Mr. Grossle's bastion, which being filled with earth, had given way' And in December 1778 a couple of eighteen-pounders were 'ready to run on the outwork before the new gate ... it being so very low that two guns there will do more execution than any of the platform'.

Meanwhile, the finishing touches were given to a large new building inside the castle. In January 1777 it was believed that the entire row of lower arches could be finished before the rains began, and the exterior was plastered for the first time. In July a new roof was being laid 'on the little gallery behind the new building', in November a parapet was going up 'behind the gentlemen's apartments', and in March of the following year another parapet between 'the lower platform' and the slave yard; also, 'the gentlemen's privy' at the end of the lower platform
2 ELMINA: FORT ST JAGO

3 ELMINA: FORT ST JAGO
   a Entrance
   b Ravelin
   seen from tower

4a ELMINA: FORT ST JAGO North side
4b KETA: DANISH LODGE, 1777 (by a Danish sailor)

9 Store over magazine
5 M.
   a Upper plan, January 1756 (after Watson)
5    PRAMPRAM: FORT VERNON b Section, 1756 (by Watson)

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   a August 1637 (by Propheet)
8 ELMINA CASTLE
   b 1640-4 (Vingboon copy)
10 ELMINA CASTLE AND FORT ST JAGO, 1665
(Eugen copy)
a i668 (after a Dutch sailor?)

II ELMINA CASTLE AND FORT ST JAGO
b 1724-5 (by Molster)

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i3a and b ELMINA CASTLE, 1704 (after a Dutch officer?)

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A NA
18 ELMINA CASTLE
Polygonal tower and colonnade

19 ELMINA CASTLE
Gateway between the ditches

20a and b ELMINA CASTLE Ornament over main gateway

21 ELMINA CASTLE
- a Defences of the bridge b Wall between the ditches
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a Pediment in Great Court
24 ELMINA CASTLE
b Doorways in Great Court

25 ELMINA CASTLE
Great Court looking to south corner
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28 ELMINA CASTLE
Entrance of rectangular block and passage
to Inner Court
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31 ELMINA CASTLE
a Passage to Inner Court
b Chapel seen from Inner Court

a Interior of chapel b Room off south-west of Inner Court

32 ELMINA CASTLE

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34 ELMINA CASTLE
a Iron railing of balcony
b Front of chapel, 1951

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a Top of north tower and roof of chapel b Stair on west bastion

36 ELMINA CASTLE

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a 1682 (after Barbot) 42 GHRISTIANSBORG b 1704 (after a Dutch officer?)

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a CHRISTIANSBORG: Inscription on south-west bastion b PRINCESTOWN: GROSS-FRIEDRICHSBURG. Carved emblem

a I688 (after a Brandenburger officer?)
51 PRINCESTOWN: GROSS-FRIEDRICHSBURG
b i709 (after a Dutch officer)

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a South bastion

53 PRINCESTOWN: GROSS-FRIEDRICHSBURG
b South corner of court
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54 PRINCESTOWN: GROSS-FRIEDRICHSBURG
Tower room from south-east building

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a MOURI: FORT NASSAU, 1704 (after a Dutch officer?)
b AXIM: FORT ST ANTHONY, 1679 (after Barbot)

a i7o9 (after a Dutch officer?)
59 AXIM: FORT ST ANTHONY b 1786 (by Fisscher?)
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a East side
60 AXIM: FORT ST ANTHONY
b North side

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I
a North-east bastion
62 AXIM: FORT ST ANTHONY
b Outwork and south-east bastion

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65 GAMBIA: JAMES FORT
The Governor's room, from the south

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a 1704 (after a Dutch officer?)
66 CORMANTIN: FORT AMSTERDAM
b From north-east

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a BUTRE FORT BATENSTEIN, 1709 (after a Dutch officer?) 68
69 BUTRE: FORT BATENSTEIN
a South side
b Entrance

70 BUTRE: FORT BATENSTEIN
Entrance

71 BUTRE: FORT BATENSTEIN
North side of court

72 SHAMA: FORT ST SEBASTIAN
b 1786 (by Fisscher?)

73 SHAMA: FORT ST SEBASTIAN
b West gateway

74 SHAMA: FORT ST SEBASTIAN
b West side
75 SHAMA: FORT ST SEBASTIAN
a West side
b South-west tower and inner gateway

- a.
- b.

a AKWIDA: FORT DOROTHEA, 1709 (after a Dutch officer?)
b SHAMA: FORT ST SEBASTIAN. North-east corner

1727 (after Smith)

79 COMMENDA: ENGLISH FORT
b Viaduct between inner and outer buildings

1709 (after a Dutch officer?)
8i DIXCOVE FORT
b North-east and north intermediate bastions

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84 DIXCOVE FORT Entrance

a Inner gateway and modern tower
86 DIXCOVE FORT
b Cornice of spur

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87 APAM: FORT PATIENCE
b From the air, 1949, looking north-east
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a SEKONDI: FORT ORANGE, 1709 (after a Dutch officer?)
b BERAKU: FORT GOOD HOPE, C. 1710-50 (after a Dutch officer?)
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89 BERAKU: FORT GOOD HOPE
North-east corner

a North-west bastion BERAKU: FORT GOOD HOPE
b West side

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91 ANOMABU FORT
West side with main gateway

\_ a From north-east 93 ANOMABU FORT
b North-east corner of court
a South-east bastion and small gateway
94 ANOMABU FORT
b North-west corner before restoration, 1953
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a Court from entrance
95 BEYIN, FORT APOLLONIA b South corner from entrance

a BEYIN, FORT APOLLONIA. South-east side with entrance
b KETA: FORT PRINSENSTEN. Ornament above gateway

CAPE COAST CASTLE: THE ENGLISH HEADQUARTERS
was altered so that it would no longer affront the eyes of visitors entering the
castle. In April a pantry at the end of the new building was plastered, apparently
for the first time. A 'gallery before the Governor's door' is mentioned in August.
From all these vague data it would seem that the 'new building' probably
contained quarters for all the subordinate officers and perhaps for the Governor,
that a balcony raised on arches ran along the frontage, and that the site was beside
the lower, eastern portion of the great courtyard ('the lower platform'), close
behind the sea-gate (where visitors had caught sight of the privy). It must
therefore be identified with the eastern part or the whole of the long building
along the north side of the courtyard. Although now three-storeyed, this building
used to be two-storeyed with an open balcony along the upper floor (at the centre
of which was a room intended for a chapel, but never fitted up or used for that
purpose). The whole upper floor was said (in 1824) originally to have formed
officers' quarters.

Incessant maintenance was still required. In January 1778 slaves were busy
pounding old bricks to make tarras, the waterproof cement habitually used on
platforms and flat roofs; the hall, exceptionally, was covered with lead, which was
taken off to lay new boards. In June, the Governor made the entry in his diary:
'Incessant rain the whole night, and so heavy that scarce a roof in the castle holds
tight.' None the less, when he and his Council wrote to the London Committee ten
days later, they could justly take pride in comparing the castle with its state before
1750. 'However showy it may have been in the old Company's time, it was never
of that strength it is at this day. Since our time the nearest way from the landing-
place into the castle was at the distance of one hundred yards; now you may land
and in three steps be inside the gates.'

References to new construction occur also in documents of 1780. In April the
accountant noted the completion of the last arch in the rampart of a new gallery,
and, two days later, that bricklayers were 'filling up the battlements of the gallery',
i.e. laying the pavement of a balcony; the work continued into May, progressing
very slowly because of a shortage of lime and stone. On May 20th the Governor
entered in his diary that a new building was in progress, and in October that a
white soldier, who had formerly been a brickmaker, was relieved of other duty
and put to making bricks 'to complete the new buildings' But none of these entries
gives any indication of the site of all this activity, which continued at any rate into December and probably into 1781; perhaps a western portion was being added to the building of 1777-8.

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The only new structure recorded in the next few years is a cornroom, the building of which, in 1787, had to be postponed till enough European bricks could be bought. (The many attempts to bake bricks on the spot seem always to have given poor results.) Another design for a corn-room was submitted to London seven years later; it vaguely resembles a building which stands in the courtyard, backed against the south-west round tower, but if that identification be correct, the shape of the windows and doorway must have been changed. A point in favour of the identification is that the tower itself, which must have been reconstructed beforehand, is traditionally called Dalziel's Tower, after the Governor of 1792-8. Since the tower no longer performed its original military function, but had been superseded by the more recent defences, it was rebuilt in the present form for residential purposes, and the height was increased. Another piece of reconstruction must have been entailed by the collapse, in 1794, of part of the south-east battery - none of which, in fact, seems at all likely to retain the original masonry of three centuries ago.

A nominal roll of 1796 is peculiarly informative. The occupants of the castle may be classified as sixteen officers, ten subordinates (noncommissioned officers or artisans and the buder), twenty-five soldiers and bandsmen (drums and fifes), three bell-boys, seventy-five men slaves on specialized duties and ten unfit for service (apparently superannuated), eighty-two women slaves for general labour and seven unfit, and their numerous children.

In 1796 the total of ninety-six cannon included thirty-nine which ranged from twelve-pounders up to forty-two-pounders, monsters by the standards of the Coast. They may, however, have been received long before, because in 1780 the castle had possessed that very same number of 'great guns.' The carriages, which in 1780 had been in dubious condition, were being replaced - probably by some which still exist. The fourteen medium-sized and three heavy mortars or howitzers were not mentioned in 1780, but perhaps only because their state invited no comment. But of the twenty-six barely serviceable saluting guns of that date, most had certainly been replaced by 1796, when the number stood at thirty-three.3

In 1796 most of the buildings were stated to be in good condition. Yet the gardens, which had been left in a ruinous condition by the Governor of 1784-7, could not be fully recovered because of a shortage of labour, due to the great number of essential repairs that were going on in the castle.

The abolition of the slave-trade in 1807 put the owners of the castle and its subordinate forts, the London Committee of Merchants, in an
extremely difficult position. Whereas the Dutch and Danes owned plantations, the English had been forbidden to undertake any activity which would involve competition with Africans, and so were left entirely dependent upon commerce, which fell to a catastrophically low bulk and value. Moreover, the drop in revenue was accompanied by an increase in direct expenditure, because the salaries of all officers had to be doubled or even trebled in compensation for the loss of payments to which they had been entitled in respect of slaves sent overseas. As for the permanent slaves under the former system, they had always received regular wages, and so no additional expense would necessarily have been incurred by their continued service. Actually, the castle's labour force rose by thirty-four effectives between 1796 and 1820, when it comprised one hundred and one men, twenty-eight women for indoor work and sixty-two 'labouresses' (besides twelve 'superannuated' women). A difference of twenty-five per cent in as many years can scarcely have resulted from natural increase (upon which the executive relied to maintain numbers) and must have been partly due to the concentration at Cape Coast of personnel who had lived elsewhere; several of the subordinate forts were abandoned soon after the slavetrade came to an end, because the costs of maintenance far exceeded the incomings.

Many years of discussion, in which complete withdrawal from the Coast was considered, ended in 1821 with the decision that the Crown should take over the London Committee's responsibilities. These were not limited to the castle and the three remaining lesser forts, but included also the tribal areas covered by old agreements. The degree to which the local people had become dependent is illustrated by the Committee's reaction in 1817 to the news that the town of Cape Coast had accidentally burnt down; the Governor was ordered to plan a systematic lay-out for the new town, evidently in the full expectation that he would have no difficulty in enforcing adherence to the scheme.

Till 1822, when the Crown took possession, the castle seems to have remained just as it had been during the last years of the slave-trade. Its condition may have been generally satisfactory but the 'new' north building had suffered from neglect, and the chapel, half-way along it, had never been finished. Action was quickly taken to adapt the castle to its new function, which included the accommodation of a garrison to meet the constant threat of Ashanti invasion. Under Governor M'Carthy, 1822-4, the western portion of the north building was converted into barracks and a third storey added for the same purpose, level with the wall-walk. (The dimensions of the building are stated as two hundred and sixteen feet by twenty-four feet, corresponding with 195)

OTHER HEADQUARTERS
the present inside measurement for the length and exceeding it for the width by a couple of feet.) M'Carthy also solved the old problems of water-shortage by converting the slave-vaults into cisterns. Since, however, the rain conducted into them fell on open spaces in daily use, as well as on the roofs, the water must have been unfit to drink by modern standards, though no doubt less harmful than that from the 'nasty, muddy pond of ill taste' in the garden - the best supply available
for more than a century past. The guns - seventy-seven cannon and one mortar before the Crown took over - were all very old and almost all unserviceable, owing to exposure to the salt-laden wind. The iron carriages, however, only needed repainting.

At this period, the town as well as the castle required fortification in the event of an attack by the Ashanti Confederacy, with its unprecedentedly large and well-armed forces; the invaders could have obtained supplies of food and ammunition, owing to a permanent alliance with Elmina, and so be capable of maintaining a prolonged siege. A hasty effort towards safeguarding the approaches to the town was made in 1820, when 'Smith's Tower', consisting of mud upon a stone base, was built on a commanding hill-top, six hundred yards inland from the castle; guns, landed from a warship, were rushed up. The fort provided accommodation for an officer, a sergeant and twenty soldiers, and contained a powder magazine, a water-tank and storage for food. In 1822 another outpost, Fort M'Carthy, was built. In 1830-1 'Smith's Tower' was replaced in durable materials, and renamed Fort William. The square tower (used as a lighthouse ever since 1835) is twenty-nine feet high and stands within a circular battery, eighty-one feet six inches in diameter and raised twenty feet above ground; a stair was applied against the exterior, and an engraving of 1874 suggests that there was a guardroom on the landing. A much smaller example of the same plan may be seen in Fort Victoria, which was built in 1837 on the site of Phipps' Tower; the central tower is only eleven feet square and about fifteen feet high. In both forts the rain was collected into tanks under the floor of the battery; the miniature Fort Victoria could store no less than sixty square feet of water. Original guns, bearing the cipher of a King George, still remain in both forts.

A young Danish visitor of 1836 wrote home to his parents describing the castle as 'a small fort but exceptionally fine ... not as big as Christiansborg, but in every way it is attractive and handsome. The terraces are all mirror-smooth and plastered with cement. The native town around the fort is very clean, and the merchants' premises are particularly fine.' (Probably the architectural style peculiar to the old houses of present-day Cape Coast had already been fully developed, for it

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CAPE COAST CASTLE: THE ENGLISH HEADQUARTERS
utilizes, in brick or plastered mud, evident adaptations of European decorative features, most of them so early that no examples can have remained in the castle when the great fire destroyed the previous town.) In comparison with Elmina and its filthy town, he found Cape Coast 'a little heaven, worthy to be reputed the most attractive citadel of the whole African coast' In fact, the castle was then going through the best period in its history. The balconies, at any rate in the western building, were embellished with marble pavements of alternate black and white squares, and no doubt the more public rooms had received sumptuous treatment. But in 1844 the condition was again reported bad.

When Cape Coast became the capital of a British colony, and the castle its Government House and military headquarters, the effects were disastrous as
regards amenities, and aesthetically lamentable. By 1874, two years after all Dutch possessions had been purchased by the British Crown, the town had spread north over the gardens and also eastward of the castle, from the nucleus laid out on a systematic plan after the conflagration; there wild fig-trees shaded the two main streets, and flowering Thespesias some others. The inhabitants of the castle still grew fruit and vegetables, but in a small, though well-kept, garden between the Wesleyan chapel and a track to the lagoon. That road, throughout the middle of the century, formed the only agreeable promenade at Cape Coast; it began where 'a belt of Thespesia trees on either side affords shelter' The wealthier Europeans took to sailing, but the health of the remainder would have suffered from the lack of outdoor diversions even had the castle not become congested. Its comfort, however, had been enhanced by roofing the balconies along both sides of the two long buildings - the north curtain too being roofed like another built outside. A disorderly crop of little buildings covered and stood around the south battery. A custom-house was placed at the foot of the sea-gate. The approach to the main gate (in the spur) was covered by an outer wall, strangely designed with buttresses which make emphatic vertical lines, quite out of keeping with the general horizontal effect.

In the course of time (especially after the removal of the seat of government to Christiansborg), the appearance of the castle became increasingly disgusting owing to innumerable alterations and additions, mainly in wood and corrugated iron (both of which were allowed to rot unattended), and to utter disregard for seemliness in every respect. The original lines of the old buildings have been obscured. In the case of the western block, they have been falsified by roofs of tarred paper laid at the wrong levels; the central portion used to be considerably taller than either end, and the difference was emphasized by lancet openings in the various parapets (now blocked). Although eventually (in 1955) the Public Works Department endeavoured to put the castle in a reasonable state of repair, many old walls could not be reached behind the ramshackle excrescences, which could not be removed for lack of accommodation elsewhere. Under these conditions details of the former appearance cannot be ascertained, and there has been no chance of investigating the structural history of the castle.

According, mainly, to Tilleman, the sequence went as follows:
1657 Founded by a Swiss officer on behalf of the Swedes
1658 Taken for the Danes by a Swedish officer
1659 Taken by the Dutch, and almost immediately retaken by the local tribe, the Fetu
1659
or
1660 Returned to the Swedes, then under an officer from Hamburg
1660 Transferred to the Danes by treaty
1663 Seized by the Fetu
1663 Bought by the Dutch
1664 Captured by an Anglo-Danish army. Thereafter continuously English or British.

2 Three versions of Smith's plan of 1727 are known: a pen-and-wash original (belonging to the United Africa Company London), a large and a small engraving. All contain different errors. His original views (also at the United Africa Company) do not correspond in detail with the engraved versions, nor with any of his plans.

3 The cannon of 1796 are listed as six forty-two-pounders, ten twenty-four-, twelve eighteen-, twenty-one twelve-, eight nine-, six six-, seven four-, twenty-four three-, and two two-pounders. The mortars and howitzers are stated as two of thirteen inches and one of seven and a half inches. The saluting guns of 1780 comprised ten four-, ten three-, and six two-pounders; the thirty-nine 'great guns' are not detailed.

'The burial-ground near the garden had probably ceased to be available before 1797, the date of the first marked grave within the castle. The inscription, on the west tower of the spur, gives the name of Andr6, son of Governor Dalziel, died May 24th, 1797. Next to it is the slab of Mrs Elizabeth Fountains and two infant female children; she died August 26th, 1803, in the 38th year of her age. Three graves in the great courtyard bear the initials (apparently carved long after) of Governor Maclean, died 1847, his wife 'L.E.L.', who died in 1 838 from an overdose of laudanum (accidentally taken while feverish, as everyone on the Coast knew, but few in London would believe), and the African chaplain and schoolmaster, Philip Quaque.

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THE DANISH HEADQUARTERS
(Pls 41b-5oa)
AN example of aggrandizement, Christiansborg is unparalleled in West Africa. It began as a trading-post of the least important type, a 'lodge', such as might, on an average, hold barely half a dozen rooms (storage included) and could be defended against rioters but against no organized assault. The lodge, the foundation of which was traditionally ascribed to the Portuguese, was actually built by the Swedes in 1652; the Dutch, however, seem to have occupied it by i66o, and in the following year the Danes took it. They found that opportunities for trade promised well, but the limited storage space did not allow them to maintain a sufficient stock of goods to compete with the Dutch and English forts at Accra, less than three miles distant. They therefore promptly bought the site (for the equivalent, in goods, of IOO oz. of gold) from the paramount Chief of Accra, to build a fort of comparable size, which they named Christiansborg, 'Christian's Fortress', after their reigning king, Christian V The agreement stipulated that the fort be built of stone - a hint that the lodge had probably been mud-built, although some pre-Danish masonry was believed to be still identifiable a hundred years later.

The need for expansion must have first become acute in i685 when the Danes lost their old headquarters, Fredriksborg (on the outskirts of Cape Coast), and the
Governor took up residence at Christiansborg; its sole occupants, when he arrived, were eleven adult slaves and their children. In the course of the next hundred years the Danes obtained almost a monopoly of trade along the coast eastward as far as Keta, by building a chain of nine subordinate forts and lodges; this development naturally increased the importance of Christiansborg and gave cause for its continued enlargement. The gradual transformation of the rather insignificant fort into a castle resulted in an incongruous huddle of buildings, piled one on top of another or one outside the other, and only the lower portions proved sound enough to resist an earthquake in 1862.

Concrete
Cliff

FIG. 14 Christiansborg. Plan of Danish remains, z949
Broken lines indicate structures above
C Cistern
F Room with flat ceiling R Modern reconstruction
S Ventilating shaft
V Vaulted room
(The largest vaulted room in the back of the north-east bastion supported the chapel.)

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The British, who had bought the Danish possessions in 1850, replaced the upper storeys only in part, by wooden buildings, for they had little need for Christiansborg at that time. Not till long after the castle had become Government House was a wholesale rebuilding undertaken, and then new upper storeys were designed in keeping with the Danish remains below, which have been left almost intact (Fig. i4). By comparing the evidence they afford with old sources, especially plans and views, it is possible to trace successive stages of alteration and expansion throughout the Danish period (Fig. i5).
The fort occupies the corner of an extensive plateau of soft rock, overlooking the sea on the south and commanding also a view along the coast to west and east. The early walls were placed slightly inwards of a cliff on two sides; on the south it stands above a narrow strip of rocky shore, but on the east it turns inland beside low ground, where a wide sandy beach could be used for a landing-place. The African town, Osu, lay on the plateau, more to the north than to the west of the fort, the main entrance of which has always faced north.
The fort as designed in 1661 (Fig. i5) must have been approximately square, measuring externally about seventy-five feet along each curtain, while the bastions projected twenty feet or more at each corner. Actually the construction of the fourth bastion had to be postponed till another load of materials arrived from Denmark, and the completion of the whole building is said to have taken nine years - a plausible length of time, considering this was only an outlying fort. In 1679 the occupants consisted only of the Danish commander, a Greek assistant, and forty slaves. The assistant is said to have instigated the murder of his
commander and then to have sold the fort to the Portuguese. They held it for only four years (renaming it Fort St Francis Xavier) and sold it back to the Danes in 1683, because the cost of maintaining such an isolated possession vastly exceeded the revenue which could be obtained from trading there; a mutiny of the garrison, in 1682, may have enhanced the discouragement in Portugal.

These events are recorded by a French visitor of 1679 and 1682, Barbot, who also drew (P1. 42a) and described the fort itself. While it generally resembled the two at Accra, it was, by this time, 'much stronger and more spacious, the curtains and batteries [i.e. bastions] more solid and lofty. The tower and lodgings are also larger, with a good corps de garde [guardroom], and a spur at the gate, which overlooks the village. The Portuguese have raised the said curtains and batteries three foot higher than they were when possessed by the Danes.' There were twenty-four iron cannon and a few saluting guns in 1682, compared with only four cannon and three mortars just before the expulsion of the 201

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Danes. The Portuguese, having lost their historic possessions on the Coast in the previous generation, valued the fort more highly than proved to be economically justifiable. The number of occupants increased to eighty, including forty-five white soldiers. The buildings, one might think, would have needed enlargement to accommodate so many, but Barbot refers only to the addition of a chapel. Unfortunately, the engraving made for him (P1. 42a) was copied from a sketch he had drawn before the expulsion of the Danes, the only change being the substitution of a Portuguese flag. A later engraving is signed by John Kip, who died in 1722, ten years later than Barbot himself. This, too, was copied from the sketch of 1679, with the addition of another building immediately left of the tower; a cross on the gable identifies this separate structure as the chapel, and probably Barbot had tried to bring his old sketch up to date by including it. But neither engraving takes account of the increased height of the enclosing curtains and bastions, which would have concealed the lower portion of the groundfloor rooms in the tower and of the adjoining one-storeyed lodgings.

From 1685 to 1850, when the Danes sold out to the British, Christiansborg remained their seat of government except for one interruption. In 1693 an Akwamu trader went into the castle with a party of his tribesmen, at a time when the occupants had been reduced by sickness to twenty-five serviceable men, and overpowered them. Twelve months later the Danes bought out the Akwamu, who have, however, retained in their State Treasury a trophy of their occupation in the form of thirty iron keys (P1. 41b). Some, which are fitted with wards, may have been supplied from Denmark, but the majority appear to have been the work of the castle blacksmith; they consist of a bar with a projecting fin, shaped to fit each individual lock, often with notches. When the Danes recovered Christiansborg
after this episode, they increased the establishment to seven civilians (including
the surgeon and the chaplain) and a garrison of thirty-three white men; with three
hundred African auxiliaries and twenty-eight cannon, their strength was
formidable by the standards of the Coast.
Tilleman's book, completed upon his return in 1695 from three years' service at
Christiansborg, contains a plan and a bird's-eye view, which are consistent with
one another and look (though sketchy) broadly reliable. According to the view,
the tower was oblong, with the short ends facing seaward and inland (as was
unquestionably correct), but it rose only one storey above a uniform expanse of
flat roofs level with the enclosing walls; rooms of a single storey ran along all
four sides of the castle, and only the block between the court and the sea was
more than one room thick. Clearly the tall roof of the chapel must have been
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removed, but the apparent reduction in the height of the tower may be deceptive.
That only one storey projected upwards is confirmed by a childish engraving of
1704 (P1. 42b), which, however, gives a different impression of the tower, being
drawn from an opposite point of the compass, and from ground level instead of an
imaginary position up in the air. Consequently the great height which both
draughtsmen attribute to the one upstanding storey can more readily be
appreciated; Barbot's two low storeys may together have been no taller.
A satisfactory explanation of the changes may be found if a great structural
improvement, known to have been completed before 1698, be assumed to date
from the interval between Barbot and Tilleman, i.e. 1682-92. The original roof of
every ground-floor room, except in the tower, was replaced by a barrel-vault, flat
on top, and strong enough to support cannon. The thickness of the vaults must
have raised the roofplatforms by several feet, and this would have necessitated the
raising of a floor inside the tower to match, with the result that only one storey,
though a very tall one, remained upstanding.
Tilleman's plan supplies, in conjunction with the evidence already considered, the
first adequate data for a description of the castle, at approximately 1695. The
original square shape of the exterior remained unaltered, and so probably did the
internal plan. The courtyard was forty feet wide, as at present, but scarcely thirty-
three feet long, north to south; its southern limit was the wall behind the present
balcony, while it ended northwards only a little beyond the foot of the present
staircase. A continuous series of rooms surrounded all four sides of the court, and
were backed against the curtain except on the south, where other rooms
intervened. On the west (P1. 49b) and east, the rooms are still well preserved, and
most of those on the south exist, though somewhat altered; but of the northern
row there remain only the rooms at either corner. The central room of those which
formerly connected them contained a gateway in the curtain-wall and another
towards the court; evidently it constituted the guardroom which Barbot found
commendable. The rooms all round the court were one-storeyed, and vaulted to
support a roof-platform of uniform height. The castle, wrote Bosman in 1701,
\'looks as if it were but one continued battery, as it is really in effect; for the roof
being entirely flat, the cannon may be conveniently planted on all parts of it. The platform, in fact, was not interrupted by the tower, which stood by the edge of the court, separated from the seaward curtain by rooms of the normal height. The tower itself has long since been merged with other buildings, but the site can be recognized behind the south side of the court (Figs 14, 15), owing to the fact that the rooms within were not vaulted; they must have had wooden ceilings, which were replaced in concrete during the latest restoration. The exterior of the tower, if the walls had kept the maximum thickness to the top, would have measured about thirty-nine feet on the north and south, thirty-two feet on the east and nearly thirty-four on the west, but the masonry was probably rebated in the exposed portion. The plan of 1695 marks two staircases inside on the ground floor; one probably led to a basement which is now filled solid, the other upwards. Subsequent additions have raised the adjacent curtain to probably a greater height than the tower, but the formerly uniform level of the roof-platform is preserved on the other sides of the courtyard. The curtains themselves have all been obliterated beneath or behind later masonry.

Of the four bastions, only that at the south-east corner has been preserved more or less intact. Most of that at the north-east still exists, but inconspicuously; half of one external face can be seen from a later outwork on the east, while the base of another constitutes the southern wall of a vaulted passage which leads from the court to the outwork. Almost half of the south-west bastion also survives as a platform which projects southward, turns and runs a length of eighteen feet nine inches till it meets the taller and much larger bastion of 1788-90. There are no visible remains of the north-west bastion.

The gateway was protected by a spur, which already existed by 1682 and presumably should be identified with the outwork mentioned in 1694. It probably was enclosed only by low walls of mud, because it is ignored on the plan of 1695, which, however, represents twin projections from the middle of the northern curtain; these long narrow structures are best explained as buttresses or tanks. A triangular spur is known from a pair of engravings of 1704 (Pl. 42b); it ended externally at a little gatehouse, aligned on the main gate of the castle, and the two walls led back to the inner corners of the north-west and north-east bastions. The space so enclosed could not have held more than a few families, and the obligation to afford refuge to their allies during tribal wars eventually led the Danes to provide a stronger and more capacious outwork. That it was long postponed may have been due to more pressing needs; in 1722 the English at Accra reported the castle to be 'in a decaying state'

A long account of Christiansborg was published in 1760 by Romer, who had spent many years there as an officer of the Danish Company; this, and the two engravings which accompanied it (Pls 43, 44), form the main source of information upon the buildings of his time (Fig. 15). A translation of the more relevant passages follows. The dimensions he includes were presumably round.
figures, in which case it would have been misleading to convert them into precise equivalents in English

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measures; they are therefore stated in old Danish feet of nearly 314 mm.,
approximately 3% longer than an English foot.
Christiansborg, says Romer,
is a massive and uncommonly strong building: all the storehouses are vaulted, and
the walls are 8 ft thick. It used to be an absolutely regular fort with four bastions
and made, I think, a square of 120 ft: the batteries [i.e. the bastions] were 36 to 40
ft high and 24 wide, and occupied with some 40 iron cannon. We could not find
place for many goods, especially when we received by each ship 30-40,000 pots
of brandy; then there was no room in the storehouses and we were obliged to set
the vessels filled with brandy in the rooms of the servants, who imposed a heavy
leakage or rather 'drinkage' There were then no single rooms for the Europeans,
who sometimes had to lie four or six together in one small room. One of the past
Governors took the whole of the western battery, set another storey upon it and
arranged three rooms in it for his own use. Below these he arranged the soldiers'
guardroom; thereby their night-quarters came to be very far away from the gate,
where they should have been. Another Governor, in order to provide many
storehouses, had the so-called New Point built, which is a large bastion on the
north-west of the fort, and is more than half as large as the whole fort. We
obtained three large vaulted storehouses beneath it, and afterwards no longer
needed to keep our brandy in the servants' rooms. If we had a similar bastion on
the north-east side the fort would again become virtually regular, whereas at
present it is the most irregular fort on the Coast, as can be seen from the copper-
plates [Pls 43, 44].
The wall that surrounds the fort is called the Outwork; between this wall and the
fort we keep our Negroes if the enemy are going to attack their town. Both in the
walls and in the breastworks of the fort are seen long openings for shooting, wide
inwards and narrow outwards, so that, if the enemy should come close enough,
the Negroes can use their flint-locks to fire through them and yet be under cover.
At a cannon-shot from the fort towards the northwest, and two flint-lock shots
from the town of Osu, we have a watch-tower, on which are, or could be, 8
cannon; it is called Provesten ('Touchstone').
These fortifications are impregnable, and if all the African forces known on the
Gold Coast were to unite, they would be unable to capture them, so long as we did
not run short of provisions or war material and had a garrison of 30 Europeans
and 300 Africans.

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Romer's account of changes on the west and north-west ignores an intermediate
phase, represented by a bastion which was placed along the north side of the
original north-west bastion, but projected beyond it both outwards and inwards.
The top made a rather larger gunplatform than was essential, so that it could be used also to carry rooms behind; as the old views show (Pls 43, 44, 46 - on right edge), the two-storeyed building that contained the Governor's lodging and the guardroom stretched across the back of this bastion and almost the whole of its predecessor. But the second bastion certainly was not designed with this project in mind. Had that been the case the disadvantages of placing the guardroom on an upper level would have been avoided by leaving a suitable cavity at the foot of the bastion, instead of building a solid back. Actually the back is the only wall exposed, and the fact that it is recessed from a room behind the original bastion gives further proof that the upper building must have been an afterthought; a straight frontage above was obtained only by raising it upon arches. Both the upper storeys have been destroyed, but apparently they formed a long and narrow rectangle, one room thick. According to a statement of 1768, there was space only for the Governor's private sitting-room and bedroom, and when he needed an office he had to make use of the hall, in which his subordinates regularly dined at his table. The builder may, to judge from Romer's evident hostility, have been Governor Bilsen, 1744-5, who suspended him for a while.

A third though partial bastion, Romer's 'New Point', stands against the north side of the second bastion, but rises three feet higher (nineteen feet six inches above ground) and projects much farther west; it contracts to an abnormally sharp apex, filled by a bath-house (and latrine?), which was made less cramped by kinking the wall that separates it from the platform (P. 48b). The second and third bastions together constitute a single complete work, and Romer so regarded them when speaking of their combined size, though strictly the third alone formed the 'New Point'; the identification is certain because of the three vaulted storerooms within. One is a mere lobby, the others are thirteen feet six inches wide; they are ventilated by square traps through the centre of the roof, which is six feet thick, and by shafts through a side wall, eight feet six inches thick. From Romer's tone of personal reminiscence the date of construction should be placed not long before 1750. The construction of the second bastion, and perhaps of the building which was soon placed upon it, may be associated with Waero, the Governor of 1728-35, because his name and the date 1734 are crudely carved on a slab set into the wall of the court, together with another slab bearing the cipher of Christian VI (1730-46).

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The entire outwork that Romer described and illustrated must have been used as a tribal refuge in 1743, when an Ashanti army overran the town and besieged the castle; there is, however, reason to think that it had not long been completed and was constructed piece by piece at various times. A sketch of 1724-5, drawn from a ship at sea, proves that the south portion did not then exist, and the earliest representation of that sector occurs on a magnificent Danish gold coin struck in 1747. But coins of 1725 and 1726, with rather indistinct views of the castle, apparently represent the tower on the east side and the stretch between it and the south-east corner of the castle proper; from Romer's engraving this sector
practically constituted an independent work and might have been built earlier than any other. The north-west sector, on the contrary, was clearly planned with relation to the 'New Point', to which it ran parallel, but only as a result of having been re-aligned, for, beyond question, the slightly earlier Governor would not have built his lodging on the second bastion if there had not already been an outwork around it, and close enough to be efficiently overlooked. Furthermore, the outwork of his time - probably a few years after 1734 - must have linked up with the east tower, and have extended along the west of the castle, though it need not have continued on the south.

Extensions at the end of the same century involved the demolition of nearly all the outwork. On the south-east sector alone is an outer wall still preserved, but it is scarcely reconcilable with the engravings, though consistent in most respects with a drawing of 1847 (Pl. 45). At the north end this wall joins a bastion of about 1778 and must have been built then or later, but the remainder probably incorporates some early work, or, if the engravings were inaccurate, may be early throughout. An almost totally illegible inscription on the parapet (Pl. 47b) seems to contain the date 1747 - perhaps that of some repairs. The sector parallel with the old seaward curtain was the only other to last into the next century; it is represented on Webster's coloured print of 1806, but has since perished, maybe through erosion of the cliff. The wall can have been little more than a revetment to the front of a ledge, where stood a row of cannon - probably those which fired the customary salutes to incoming or departing ships. No intelligible traces of masonry can now be seen on the ledge, apart from a doorway containing steps that led down through it to the beach, and the age of these remains is quite uncertain. The ledge behind the wall was virtually subdivided by the encroachment of buttresses which projected several feet from the old curtain and must have been earlier than the outwork wall, because they appear on the drawing of 1724-5 which does not show the wall; they were replaced in concrete during the restoration of 1950. The south208

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east corner of the outwork was altered on the same occasion for the sake of the Governor's plumbing, and the previous appearance can be only vaguely discerned from air photographs taken a couple of years earlier. The wall necessarily bent outwards to avoid a sloping revetment (perhaps of the same date) which supports the south-east bastion; the extent of the projection seems to have been roughly copied in a modern septic tank (upon which cannon incongruously stand). This lower salient is likewise supported by a revetment, at the first inward turn of the cliff; the base contains an arched recess which looks as though it might have been intended for a gun-port (in which case there must have been a tunnel behind it), but may have been built as an easy means of enveloping an undercut rock. Romer's engraver put the isolated tower called Provesten too near the castle (Pls 43, 44); its exact site is uncertain but must have been several hundred yards away to the west. The tower is known to have existed by 1729, when it was damaged by a Dutch bombardment (which also caused some injury to the castle). In 1777 the Dutch constructed an earthwork battery, from which again to bombard the castle,
but the guns on Provesten destroyed it. In the following year Provesten was
enlarged. It was still in good condition in 1850, when it served as the Danish
evacuation base for some weeks, after the British had taken possession of the
castle and the lesser forts.
Romer also supplies items of information which bear upon the living conditions at
Christiansborg.
In the middle of our fort is an underground cistern, built of brick
and cement: it is eleven feet square but holds only a depth of six feet when
sufficient water is discharged into it; these six feet can hold four hundred barrels
of water; all the rain which falls on the batteries and bastions runs into it through
channels, so that our cistern is sometimes filled by one good storm. Since the year
1750, an excellent man has had another and larger cistern constructed outside the
fort, supplied by a pipe which leads from the old cistern to the new, which is
extremely useful, and we can now supply our ships also with the best water to be
found on the Coast. Previously, when our cistern was empty the Europeans had to
drink what is called beach-water, and cook their food in it, like the Negroes. This
beach-water is really sea-water, which collects twenty or twenty-four feet from
the edge of the sea in holes twelve to fourteen feet deep in the sand; the sea-water
filters through the sand and becomes fresh or brackish. If we Europeans are
obliged to drink such water many of us become sick from worms and other
diseases of the country.

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Romer then goes on to describe how weaver-birds came in great flocks every year
and nested on a tree in the courtyard. 'Many Europeans, both English and Dutch,
have made an attempt to plant this kind of tree in their own forts and have even
grown them but have not been so fortunate as to have these birds nest in them.'
Another chapter contains the incidental statement, 'our rooms are swept out daily
and strewn with sand'
The two cisterns which now exist are within the present limits of the court, and
were so represented on a drawing of 1847 (Pl. 46). One of them, however,
occupies a site which formed part of the outwork till thirty years after Romer's
time, and it can be identified beyond question with the external cistern to which
he refers. Over its mouth stands an elegant polygonal structure, thickly plastered
and whitewashed (but said to consist of stone), with a Danish inscription (Pl.
49a). The text has become corrupt and partly unintelligible owing to repainting;
the date on which the work began seems, however, to be stated as 1753. The other
cistern is covered by a polygonal hump of masonry under the east edge of the
main staircase (Pl. 46). Its depth is twice as much as Romer states, since its floor
lies twelve feet beneath the vault, or fourteen feet from the pavement of the court.
But the other dimensions correspond closely enough with his figures, so that we
may suppose that the depth alone has been increased since his time. Presumably
this was the original cistern of 1661, or even earlier, made to supply all the needs
of a very small community.
The engravings of 1760 contain data (ignored in Romer's text) proving that the oldest part of the castle, the south block, had already been strangely transformed. A long buttress, now replaced in concrete, on the east side (near the left edge of P1. 44), formed the landing of a stair which led up from the ramparts to a recess between a slightly larger tower at the south-east corner and some rooms to the north, above which rose an isolated gable wherein a bell was hung. The west end of the block was wider and less irregular in outline. Every part of this building seems to have risen two storeys above the ramparts.

Towards the end of the eighteenth century the whole aspect of the castle was changed, and much of it brought into conformity with the classicizing spirit of the age. The programme of work was begun before 1778 and seems to have been continued during some twenty years, after which the depressed condition of Denmark, and then the financial loss caused by the renunciation of the slave-trade, must have hindered any new projects. The more important structures bear slabs inscribed with both the cipher of Christian VII and the actual year (Pls 48a, 50a).

The earliest of the new works diminished the shocking irregularity of the castle by the expedient Romer had suggested, the addition of a larger north-east bastion. At first the builders used mud instead of limemortar, with the result that their bastion collapsed before completion, but the predominantly solid mass that now exists must be of sound workmanship. It covers a site that reached at least as far as the outwork, which must therefore have been obliterated here; accordingly a new outer wall, which still exists, was built to link up southwards with the rest. The original bastion at the back was preserved, and used to carry a building which is represented on the engraving of 1806 but was demolished before 1847, leaving the open platform which still remains. A tunnel was built at the junction of the old and new bastions to provide access to the isolated, southern, portion of the outwork. On top of the new bastion, along the west edge, was placed a long building intended for a chapel (since the Portuguese chapel had become ruinous by about 1735), but when completed, in 1778, it was used as a powder magazine, and not till between 1789 and 1793 did it fulfil its original purpose; meanwhile services were held in a 'vaulted room under the recentlybuilt large, fine Government Hall' The chapel is said to have measured over eighty by forty feet; the interior was admired for its painted decoration. The tall porch at the south end of the chapel (P1. 48a) is the only upper structure in this area which has survived, though without the recessed top in which bells were hung (visible on the left edge of P1. 46); the date 1791 is inscribed over the doorway. The porch or belfry stands above the tunnel; the chapel itself was built above a large room, which is still crossed by a pair of strong arches to support the weight. An adjacent small room (now almost inaccessible) stands at a high level and reaches the east face of the bastion, through which a doorway opens, not far below the roof-platform; the purpose must have been to bring in goods from the beach, which is
A French drawing shows them in action against the burning houses.) Most of the original south-west bastion was preserved as an open platform at the back, slightly lower than the new bastion (as may be seen on the right edge of Pl. 47a). The outwork along the cliff now became inaccessible and must have been demolished; the south-west portion of the outwork was, of course, already destroyed to make space for the bastion. The adjoining northward stretch too was replaced by a work which must be either contemporary or slightly later, since it links the great south-west bastion with the 'New Point.' It supplied an external thickening to the west curtain; the interior is hollow, containing a long vaulted storeroom, partitioned by arches which gave extra strength, as may have been thought necessary since the top could be used as a battery. Indeed, some of the cannon mentioned by Isert may have stood here instead of on the bastion; his wording might apply to both works. But in 1847, when the bastion carried nine guns, the wide curtain was described as a battery without guns. The outwork may still have existed around the north-west bastion, though demolished along the remainder of the west side; the northeast corner too had been overlaid, and soon the intervening northern portion made way for the present north curtain. The date 1790 is inscribed outside over the arch of the new gateway. No doubt an inner gateway also was provided at the same time; a curious feature which deserves incidental mention is the iron slab set in the pavement of the entrance, and said to mark a Governor's grave. The original north curtain was, one may suppose, demolished immediately, with the result that the court became more than twice as large. It was slightly reduced, however, when a line of two-storeyed rooms was built along the back of the new curtain to either side of the gatehouse; they were removed in 1912 in order to admit more light and air to the court, but a buttress-like projection from the eastern wall still marks their inward limit. They seem to have intercommunicated by means of arches, one of which remains visible, though blocked, close by. An inscription which has been placed in the centre gives the date 1797, together with the initials of the then Governor, J. P (D.) Wriesberg.
The new entrance was protected by a low triangular outwork, a ravelin. The outward end, as shown by a drawing of about 1800 or somewhat later, resembled three facets of a polygonal tower; the top was battlemented, and the doorways, which occupied the middle of each facet, were approached by steps. Since a tower above the gatehouse to Keta Fort, built by the Danes shortly after 1784, looked very similar (Fig. 46), the ravelin, which presumably inspired it, is likely to have antedated the north curtain. From a plan and drawings of 1847 it is known that the ravelin walls did not quite reach the curtain but left a gap on either side; in the western gap there was a flight of steps (now replaced by a curved ramp). We may safely assume that, as in any normal ravelin, the back was separated from the curtain by a ditch, and that the steps were a means of escape for men who had taken refuge by retreating thereto; the doors in front would naturally have been closed at the first threat of attack.

Another outwork was necessary to safeguard the north curtain, and especially the gateway, from bombardment, because the alignment chosen had left the north-west bastion ('New Point') eleven feet to the rear and overlapped by roughly as much. A long battery (P1. 45) was therefore built at the west end of the curtain, projecting fourteen feet outwards; it runs virtually to the same distance as the bastion and almost parallel, but separated by an open alley. The guns were placed on the roof, which was reached by a stair inside the battery. The whole interior seems to have composed one huge room, till it was rebuilt in 1921, when two more storeys were superimposed. The original height of the roof-platform must have been about a foot lower than that behind the north curtain. The two buildings, being supplementary for defence, were obviously planned in conjunction, and although the oldest evidence for the battery comes from the engraving of 1806 we may assume that its construction proceeded more or less simultaneously. Otherwise the short wall which links the curtain and the north-west bastion would have been liable to direct bombardment, and it could not have withstood more than a few shots. Moreover, this wall contains a gateway into the alley behind the battery; there are signs of an unusually sturdy door having been fitted, and the motive is known - the alley was used as a daytime place of detention.

At the far end of the yard, another door was hung in a return wall which closes the gap between the end of the battery and the bastion (just short of the apex). Beyond lies a service yard of such extent that, as a tribal refuge in times of war, its enclosure more than compensated for the loss of the old outwork; its regular users were the working slaves, for whose activities there had previously been inadequate space within the walls, and there were also sheds or pens for animals. The enclosing wall was attached to but lower than the battery, and began in virtually the same direction, forming the north boundary of the new yard. After turning the north-west corner, the wall recedes enough to ensure the outflanking of the long west side, at the far end of which is another salient. The back of the west wall was lined with one-storey workshops, all of which have since been

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much altered or entirely replaced. The south side, built on the cliff-top overlooking the sea, is constructed as a

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低炮台，尽管它可能从未被用于这个目的；无论如何，1847 年时那里没有安装任何火炮。炮台终止于西南角的角楼。

原始部分的城堡逐渐被改造成一组高大的矩形建筑物，其中所有建筑物都是平顶的。伊塞尔在 1786 年指出，这些建筑物从远处看去看起来不错，但在内部却缺乏舒适和方便；总的来说，房间太窄太低，最矮的人几乎站不直。其中一部分建筑物已经达到四层楼的高度，被认为是可能在炮轰下坍塌的。这项声明必须是关于南面建筑群的，因为它根据韦伯斯特从海上的观点在 1806 年绘制的图示。该建筑群之上的露台呈塔状向外延伸，可以被解释为南翼的侵蚀。在这部分建筑之上的平面图显示，南翼的外墙保持了几个世纪以来的原貌。

南翼的外观在 1844 年和 1847 年（图 45）被其他制图师大大改变之前再次发生巨大变化。该建筑被延伸成同一高度跨越了附楼，并且二层似乎已被组合。这项工作可以归因于 1824 年，当政府大厦（它现在成为南翼）被描述为提升，并在其中建设了一个精美的宴会厅和几个房间时。各种外部的便利设施和装饰可能在其他时间建成。第三层完全被一个开放的露台环绕，其中一些地方被两个或更多的较封闭的露台层叠在上面（图 46）。其正面大部分是由部分覆盖在中间的拱门和承重柱组成的，但被一个宽楼梯的尽头所阻挡。
the stair was placed far out in the court; the top formed a landing beside the open gallery on the third storey. Narrower staircases rose parallel on either side from the roof platforms behind the west and east curtains. In the latter case, the stair replaced one of the rather low buildings shown in the engraving of 1806, and cannot have been built till the other had been replaced by the extension of the south block. Nor can there have been a long delay thereafter, for this reason; although neither of the side staircases may have been strictly necessary on practical grounds, their presence is essential to the general design - which was kept, with only minor changes, in the reconstruction of 1950.

There is, however, one piece of evidence which apparently conflicts with the proposed date of 1824 or slightly later. A quarter of a mile away stand the ruins of a huge courtyard, closely related in design, yet entered through a gateway which bears the inscribed date of 1809. But the round-arched gateway is totally different in style from the segmentally arched gallery within, and might well have been due to another programme of construction - and that at an earlier time, considering the purpose of the building. A traditional identification as the slavemarket is wrong; the Danes had prohibited slaving six years beforehand, and the initials of the brothers Richter, inscribed beside the date, prove that this was their renowned trading-house. (They were the half-African sons of a Danish official who became Governor in 1816.) A strong gateway must have been essential from the first to keep the goods secure, and many years may have elapsed before increasing prosperity allowed the Richters to improve the courtyard by adding the great staircase and the terrace carried on the segmental arches, probably in imitation of the latest alterations to the castle.

Unlike their Dutch and English rivals, the Danes made strenuous but generally unsuccessful efforts to compensate for the abolition of the slave-trade by raising crops for export. Some of the plantations they established inland from Christiansborg, both at the foot of the scarp and on the hills, were long maintained, and the burden of work at the castle must have increased in consequence. An unforeseen, and maybe unrecognized, result of this unprecedented penetration into the interior must have been to expose many Danes to infection with sleeping-sickness, especially since they used their hill-station at Kpomkpo as a convalescent home; the bush which surrounded, and has now overgrown, the place, is infested with the tsetse fly that carry the disease. Whatever the cause, the death-rate at the castle was extremely high; after 1830 six successive Governors died in the course of ten years, and a startling number of memorial tablets, dated early in the nineteenth century, may still be read in a cemetery west of the castle; previously the dead may have invariably been buried within the walls, in accordance with the practice at most forts.

In 1847, only three years before the castle ceased to be a Danish possession, another large piece of ground was enclosed, extending along the entire north side and corresponding roughly with the present terrace. Svedstrup, an officer who had
recently been entrusted with alterations to Keta Fort, has left drawings showing
the castle before and (P1. 45) after the extension. A short stretch of masonry still
exists near the beach, and may be a remnant of the wall; elsewhere no visible
traces have been left, owing to the construction in 1927 of a boundary wall with a
double gateway, and the opening-up of a descent to the garden.
No structural alterations are known to have been effected in the early years of
British occupation, which began (through purchase) in 1850. The earthquake of
1862 caused extraordinary destruction, because of the excessive height to which
the originally low buildings had been raised; they seem to have consisted almost
wholly of rubble, apart from brick vaulting and mouldings. With the single
exception of the belfry, no building above the rampart level survived on the west
and east sides, and none on the south above the heads of the staircases. Moreover,
it is believed that the fallen material was packed into a basement in the southern
block, leaving no access to what is allegedly a series of storerooms as extensive as
the ground floor. After the ruins had been cleared, wooden buildings were erected
above the Danish floors, and their number was gradually increased, especially
after 1900, when the castle ceased to be used as a lunatic asylum and became
Government House. Except for some outlying portions, no work in permanent
materials was undertaken before the general reconstruction of 1950, when the
Public Works Department took care to preserve the remains of Danish
Christiansborg and so far as possible restored its former outlines in the new
buildings that were erected above.
Some iron cannon of Danish make are left within the castle and others lie half-
buried on the beach; most are of small or medium calibre. Three ornate brass
cannon, with handles in the form of elephants' heads and trunks, bear the cipher of
Christian VI (1730-48), and another such is dated 1752; it was presented by the
last British Governor to the National Museum at Accra. Two little signal-guns,
not much over a century old, may perhaps have been among the 'five brass guns'
recorded to have been fetched by the British from Keta Fort, especially since a
companion piece is preserved at a Government station in that neighbourhood.

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1 Barbot seems to have preserved another version of his sketch as well as the pen-
and-wash 'fair copy' pasted into his journal of 1679, because that differs from both
the engravings; it does not extend so far to the right, and it indicates the smaller
windows only by pairs of upright lines. There must have been windows in the
lodgings south of the tower, and presumably he merely forgot to draw the
horizontal lines at top and bottom. Kip evidently did not copy the older engraving,
but worked from the same lost original, for he avoided the previous engraver's
mistake of representing distant hills as though they rose close behind the shore,
and also made the innovation of giving the larger windows rounded heads.
Apparently he failed to distinguish between the flat lintels and the relieving arches
above, which are drawn clearly on Barbot's extant sketch and faintly indicated on
the early engraving.
PRINCESTOWN: GROSS-FRIEDRICHSBURG:
THE BRANDENBURGER HEADQUARTERS
(Pls 50b-56)

New Year's Day, 1683, the flag of Brandenburg was hoisted, for the first time in Africa, on the ridge of a hill which rises southward from a marshy plain and projects into the sea between long, sandy beaches. On the following morning, two German engineers began to mark out the outlines of Gross-Friedrichsburg - so named after Frederick, the Great Elector of Brandenburg-Prussia, who had created the new Chartered Company. The site chosen for the fort, at the seaward extremity of the highest ground, is encompassed, except on the northeast, by slopes which drop rapidly to the beaches on either side and quite gently towards the rocky shores of the promontory.

To begin with, a low earthwork was constructed, and set with thorny branches; two bastions outflanked the landward corners (at north and east), but towards the sea (south-west) there was only a straight barrier, as high as a man, behind the ditch. Four six-pounder cannon and six three-pounders were mounted as quickly as possible, in case the Dutch should endeavour to force the Brandenburg Company off the Coast. In fact, just as the first huts had been completed, and the surrounding double palisade filled with earth, a tribe allied with the Dutch advanced in great strength, but were routed by a single discharge from a sixpounder and the musket-fire of 'about a thousand' local men (whose families and goods had been placed for safety inside the fort).

This resounding success encouraged the Elector to support his Company on a lavish scale. Materials for building the permanent fort had already been shipped when, in June 1683, he approved an overwhelmingly military establishment of ninety-one white men; the commander was to be a captain and have under him two lieutenants, two ensigns, four non-commissioned officers, two gunners, seventy musketeers, and very few civilians. The armament was to be increased by sixteen six-pounder cannon and two sixteen-pound howitzers, with lesser weapons in proportion, the number of hand-grenades - fifteen hundred - should be enough to indicate the scale on which supplies were authorized. No other Company in Africa operated on a basis of such military strength, and when the decisions were actually implemented they were stepped up; a major sailed to take over the command, and among the officers who accompanied him several were obviously extra to the establishment. Captain von Schnitter and two assistant engineers went with them to direct the building of the fort, and began operations soon after they landed in February 1683. The changes they introduced can be appreciated from comparative plans, signed by von Schnitter sixteen months later, which show the condition before and after; the latter plan corresponds in most respects with a bird's-eye view of 1688 (Pl. 51a).
The outline was made regular in 1683-4 by adding two bastions at the seaward corners, exactly like the previous pair; the long thin shape represented is very different from that of the present bastions. All four bastions seem to have been now faced with stone, and the curtains may either have been similarly treated or rebuilt in solid masonry. The entrance remained at the centre of the landward side (north-east), and was reached by a wide gangway interrupted, half-way across the ditch, by a drawbridge; a smaller gangway and bridge crossed the ditch at the middle of the seaward side. The bird's-eye view, however, omits the minor bridge (which is likely to have been a temporary feature, put up for the convenience of builders) and places the entrance on its final site, off-centred towards the north bastion. The square enclosure within had, till 1684, looked 'like a farm-yard'; it contained two long narrow barracks close beside the north-west and south-east embankments, and a much wider officers' dwelling 'like a barn' (comprising three rooms, slightly raised above ground) beside the seaward bank. All these buildings appear to have been demolished while the curtains were being backed with stone, and then replaced on practically the same sites and to rather similar designs, probably to serve the same purposes; the narrow buildings are described as barracks, and the wider block formed the officers' quarters. A guardroom, too, was built, between the entrance and the north corner. The four new buildings bore little resemblance to their eventual successors, and probably consisted of short-lived materials.

Meanwhile, the Brandenburgers established lesser forts, subject to the Governor of Gross-Friedrichsburg, and so began to spread their resources. Their trade increased, and with it their business personnel, while the military staff temporarily became smaller. A nominal roll of 1686 lists at the capital fort, besides the Governor, five officers, two surgeons, twelve artisans, a sergeant and a corporal, two volunteers and 219 common soldiers. The twenty cannon included two eighteen and three twelve-pounders. These were still the largest guns in 1692, when the total rose to forty-two. The Great Elector had died four years earlier, but his successors began by favouring the Company; although a series of ill-chosen Governors had practically wrecked it before 1686, and it reached the verge of bankruptcy in 1691, trade still expanded for a while.

A complete reconstruction of the fort was declared to be completed at the middle of 1693, but five years later a Governor's report stated that 'a great many of the goods in stock are unsaleable for the reason that they have decayed owing to the lack of proper storehouses. I now have two good storehouses and hope to preserve the goods henceforward.' He had also restored the west bastion and propped the northern with three buttresses - presumably those now visible (P1. 53a), in which case all the bastions may have already been given their final shape. Early Governors (venal Dutchmen, there being no Germans with African experience) had been guilty of theft, negligence and debauchery, but one of 1696 surpassed them by bolting to Holland with the gold, the account books and other
papers. Trade now began to decline steadily, and the Government saw every reason to reduce its support to the Company. By 1700 the garrison had shrunk to a lieutenant, two surgeons, three non-commissioned officers, four volunteers, thirty marines and a drummer. No reinforcements went out, and no home leave was granted, during the next eight years, at the end of which there were twenty Europeans left in the fort, and most of them were ill. Only seven marines remained fit for service; African soldiers performed guard-duties. A drawing of 1708 (Pl. 52) agrees in all but quite minor details with another which Barbot seems to have obtained about six years earlier, with an accompanying sketch-plan and description, from a relative who administered the port of Emden, the Company's home base. A view published in 1709 (Pl. 51b) corroborates and adds to the data upon the landward frontage, but the engraver obviously misunderstood the sketch from which he worked; it had been drawn within the previous five years. The three illustrations and the plan leave no doubt that the fort already presented much the same appearance that it would still do if it had not become ruined; only two features, which are now conspicuous, had not yet been built. The bastions had been reconstructed, probably in 1693, to a greater width and with less acute angles, while the curtains were extraordinarily thick and composed of solid masonry. The parapets of all bastions were interrupted by open embrasures.

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Slits for small-arms are represented in the landward curtain, and tiled roofs behind it. A bell-tower had been built above the gateway, making the entrance more impressive than any other on the Coast, though (as Bosman gibed) rather too large in scale for the fort. The carved emblem of a crown and torch, now preserved within (Pl. 50b), was set immediately above the archway. A small gateway had been opened near the east corner of the fort, and gave access to an outwork, which seems to have been added in 1698 - obviously not till after the reconstruction of the east and south bastions, against which the enclosing walls were applied. The outwork was obviously required for a service yard, and it soon contained a number of sheds; the walls were approximately as tall as the bastions and ran, so far as was possible, along the edge of a drop in the hillside, but their presence must have lessened the defensibility of the fort, as Bosman remarked. He also observed that the parapets throughout the fort reached 'no higher than a man's knee' - an official source says three feet four inches - 'and the men thereby are continually exposed defenceless to the shot from without, which is no small inconvenience in wars with the Blacks, for no person can come upon the batteries but the Negroes easily reach him with a musket-shot. For the rest, the building part is not to be objected against, and is provided with a great many fine dwellings within.' He might well have added that the courtyard was unusually spacious, though it had actually been somewhat reduced in area by placing wider buildings along all four sides, backed against the curtains; only the upper floors obtained a strong through-draught. The external double staircase of the largest building (Pl.
52.1) was always of wood. The single staircase of stone outside the south-east building (5) is clearly an addition, applied against the previously existing wall. In 1709 a new Governor arrived with three commercial officers, a surgeon, a sergeant and fifteen soldiers. He reported that he considered the layout admirable, but that the fortress was 'indeed much in need of repair', which he proposed to undertake with his own labour force. He decided also to 'have two or three cannon from the fort set up on the shore, because that will make it easier to fire against ships as they come near'. A little building on the shore of the promontory (Pl. 55b) may confidently be identified as a magazine in which the gunners kept the day's supply of powder, safe from the spray which is blown across the site after every wave (though no splashes of water reach that far, so broad is the fringe of rocks at this spot). The boat-shaped plan had the merit of presenting the smallest possible target towards ships at sea. The inland end is twelve feet wide, including the doorway of two feet six inches; the side-walls converge for a length of fourteen feet, and then

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bend to meet in a point, three feet onwards. Beam-holes prove that the roof was flat.

A tower, added after 1708, is probably another work of the same Governor; the style of masonry is Brandenburger (Pls 54, 55a; Fig. 16.8). The tower projects from the middle of the north-west curtain and

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rises higher; the external face slopes backward and, probably for that reason, the outward end is curved. The base is thought to be solid, up to the level of the wall-walk, where a doorway opens into a pleasant room, lit by round-arched windows such as are characteristic of the inner buildings. The roof commanded the bastions on either side, but otherwise no military advantage can have resulted from the addition of the tower, which may have been a buttressing work but is more likely to have been built for the sake of the room alone.
The last Brandenburg Governor, an energetic Dutchman of Huguenot extraction, arrived at the end of 1711 and found that the Dutch and English had combined, and roused all the tribes they could, in open warfare against his Company and (still more) its African ally, John Couny. He immediately had Gross-Friedrichsburg put in readiness to meet an attack upon the landward side, where he ordered slits to be constructed for the musketeers to fire through - Bosman's criticism of the parapets had apparently been ignored till then, though published seven years before. The Governor, reporting upon this state of affairs to the King of Prussia (as the Electors of Brandenburg were now styled), goes on: 'When everything has been completed, the fortress should command respect. Then I think of making also a half-moon in front of the gate, and, if I still have some time to live and Your Majesty grants me permission, I shall put up a new complete outwork, although I have few good slaves and the mason prefers drinking to working.' These projects seem not to have been fulfilled, though two months later a new treaty was signed, binding Couny and other Chiefs, if called upon, to put all their people to work one day a week upon collecting stone and shells for burning into lime.

The last nominal roll, of September 1712, lists only twenty-one men at the capital fort and four elsewhere. In 1716 the Governor sailed for Germany to report upon the rapid decline in the Company's affairs and to ask for help. Instead, he found the king had arranged to sell all the African possessions to the Dutch; after long postponements, the agreement was concluded in 1720. Meanwhile the fort had been left in charge of a sergeant, under Couny's protection, and Couny refused to surrender it. Not till the beginning of 1725 was it captured by the Dutch and renamed Fort Hollandia.

Couny is reported to have used material from the fort to build a palace for himself, and probably took more for the imposing wall with which he surrounded the town and fort together, but he cannot have demolished any important structure. The Dutch may have had to add some of the numerous buttresses to make good his neglect, but the ground outside the fortifications slopes so definitely that slipping had begun long before and may already have been permanently checked. The only visible repair which can fairly safely be attributed to the Dutch is the upper part of the south-east curtain. It is very carelessly built, and half of the parapet lacked the usual small-arm slits. The wall-walk at one place broadens almost to the outer edge of the parapet to make a so-called 'balcony' (Fig. 16.7). This is opposite the doorway into the upper floor of the large building behind the curtain, and may have been provided as an amenity for the occupants; a comparable 'balcony' (actually a salient from a thin curtain) stood outside the hall of the Dutch fort at Beraku (Fig. 42).

The Dutch now owned too many forts in the neighbourhood; they could make use of only a small proportion of the lodgings and storerooms, and allowed the remainder to decay, while the outwork became a garden. The buildings on the
north-west and south-east sides of the courtyard were ruinous by about 1786, the 'old government house' on the south-west suddenly collapsed in or just before 1791. Only the rounded tower and the two north-east buildings were then occupied, and apparently maintenance was neglected, with the result that the fort was officially reported in 1804 to be 'in a very bad state' The Dutch finally abandoned it some ten or eleven years later, though in 1802-4 de Marree already received an impression of 'total ruin, a rubbish heap in a wilderness' But his taste for picturesque phrasing led him into exaggeration. He could see that 'the curtains were so wide that a carriage should have been able to drive around the whole fort', the parapets were stronger than at most of the Dutch forts he knew, and fine buildings remained standing on all but the north-west side of the courtyard. The tower, he says, had been the government office - in the Brandenburger period, he seems to mean; the plan of 1786 identifies it as the Dutch powder magazine, a peculiarly unsuitable use.

In 1936, when the District Commissioner, Mr A. T Kerr, cleared away the bush and repaired the ruins, a surprising amount of masonry in fair condition was disclosed. It had been held together by the excellent mortar, which incorporates unburnt shells and - in the largest building - scraps of roof tiles (not locally baked but shipped, no doubt, from Emden or Konigsberg). The stone is of a kind which does not readily disintegrate, and the bricks, though they tend to softness, have lasted well enough; they are dark red, and larger than Dutch bricks. But before Mr Kerr began his rescue-work, an Axim contractor had quarried away the entrance area to obtain building material, leaving only the spring of a barrel-vault in each of the rooms adjoining the site of the gatehouse.

A good deal remains of the curtain to either side of the entrance, and

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the other curtains are almost intact, except for the parapets. The solid west bastion had merely cracked. Of the three hollow bastions, only that on the south is almost complete (Pls 53a, 55b). Externally it measures sixty feet on each face, twenty-four on each flank; the guns fired through open embrasures (splayed in the outward direction alone), arranged three on each face and two on each flank; the interior (Fig. 17) is elegantly vaulted, with the aid of ribs and a central supporting pier, in brick with a stone backing. The east bastion has lost the side towards the entrance, and the upper portion of the next, and internally is a mere heap of earth, while the northern has lost the apex and the entire vault, though the stump of the central pier remains. The rounded tower has needed only slight repairs. One wall of the outwork is preserved, above the level of a row of small-arm slits, to a
distance of some thirty feet from its junction with the south-east corner of the east bastion, and a roughly rectangular expanse of plaster shows where a shed was built against the inward face. But in general the perimeter of the outwork can no longer be traced; a low projection from the south bastion, halfway along the south-east face, appears to have been merely a buttress, and there is no reason to doubt the plan of 1786 which marks the junction at the corner, precisely as at the opposite end.

In the Brandenburger period, the buildings on the south-west and south-east of the courtyard were the best. They have kept their full height except for the gables, one of which is standing up to a large central window (at the south-west end of the south-east building, P1. 56a). Inside there are party-walls, virtually complete, on the ground floor alone (P1. 56b); the rooms above must have been divided by wood or mud partitions. The north-west building has left no traces except beam-holes in the back of the curtain, and an outline of the slanting roof upon the side of the south-west building. A passage separated the opposite end from the small building in the north corner, but is now filled by a flight of steps (to the wall-walk) built in 1936 beside the plastered wall-face. The walls of the corner building are preserved only in the lower courses, and not continuously; they break off where the gateway stood. An adjoining building stands complete only where it met the east bastion and the passage to the outwork. The gap in the wall-walk through which the passage leads was found in 1936 to have vertical sides (as Mr Kerr informed me; the existing steps were built to his order). In the mouth of the passage is a small tank, marked on the plan of 1790. A larger but very shallow tank, in the centre of the courtyard, is marked only on the plan of 1684. The Brandenburgers must surely have made other provision for water-storage (though rain falls with unusual constancy in this district), but excavation has failed to disclose any cistern. The courtyard contained human bones in such numbers that it must have been often used for burials, and even more graves have recently been found in the outwork.

The extensive repairs of 1936 conserved the ruins for twenty years, and then decay again reached danger-point. In 1956 work began with the clearance of vegetation from the entire site, so that the bastions and curtains could be sufficiently repaired to ensure safe access. The inner buildings, it was realized, would inevitably collapse unless roofed over, and a restoration of the largest building was therefore taken in hand.

I Tilleman seems to have gathered most of his information on the Coast in 1692, but his data in the case of Princetown must be slightly earlier or else mistaken. He gives the number of cannon as thirty, and his list of personnel may be summarized as: the Governor, five trading and two military officers, two surgeons, an armourer, two sergeants, two corporals, ‘a few’ high-grade and twenty-three common soldiers and a drummer. He adds that most of the 130 African dependants had deserted from other forts.

OTHER HEADQUARTERS

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(Pls 58b-63)

Y August 1503 the Portuguese had established a trading-post at BAxim and were awaiting materials to rehouse it in a permanent building; this appears to have been completed, or nearly so, by 1508, because the bulk and value of the goods then in stock required, and should imply the existence of, capacious and secure storage. Moreover a Portuguese author, who wrote about 1506-8, refers to the building as a fortress (fortaleza). That it stood on the same site as the present fort is probable but not certain, because at some unknown date the Portuguese are said to have found themselves obliged to move from a scarcely defensible hillock to the promontory now occupied by the fort a triangular mass of hard rock, which then stood perhaps thirty feet higher than the adjacent ground on the east and dropped steeply, though not abruptly, to the sea (Fig. 18; Pl. 61). The space available for buildings, and eventually so utilized, was scarcely less than the area of most later forts, but the Portuguese seem to have begun on a very modest scale. 'A small fort' was reported by an English sailor, who had been kept prisoner at Elmina in 1555 and therefore may have been fairly well informed, while in 1563 some English castaways saw 'a fort, with a watch-house upon a rock, and a large cross of wood standing near it' By that time the original fortifications must have become obsolete; replacement, in accordance with new principles of design, was certainly completed before the Dutch took Elmina in 1637, because the Portuguese were able to hold Axim four and a half years longer. They resisted a Dutch attack in 1641, but in February 1642 withdrew by night before a landing-force had time to strike, following a bombardment by seven ships, one of which fired off one thousand pounds of powder in the course of four hours. The Dutch then entered into possession. In 1664 an English naval expedition captured the fort, but the Dutch soon retook it, again from the sea; on this occasion they landed guns on an island in the bay, and so could correct their aim with a precision unobtainable from a ship in motion. The Dutch occupation continued, without further interruption, till 1872, when the fort was transferred to the British, in excellent condition. Some alterations and many additions gradually provided for British offices, a rest-house, a prison, etc., but almost every piece of the fort had become disused long before 1950, when decay had set in. A general restoration, completed in 1957, has put the buildings largely back into their Dutch form while making them serviceable as offices of the local Council.

The economic value of the fort must have been greatest under the Portuguese, when no other trading-post existed in the vicinity of the western gold-fields and gold-bearing rivers. Soon after the Dutch conquest, the European nations began to compete in this region, and by 1700 every suitable bay eastward had been
occupied by at least one fort (the coast to the west being unproductive, and cut off from the interior by swamp and forest). Accordingly the trade of Axim fort must have shrunk; although the Dutch still obtained 'more gold at Axim than everywhere else together' (I 706), we may infer that they cannot have required additional storerooms for goods; the growth of the slave-trade may have compelled them to build larger prisons to hold the slaves bought for sending overseas, but possibly the need could have been met by using spare storerooms. As to military requirements, the strategic value of the fort had reached its height towards the end of the Portuguese occupation, and became negligible once the Dutch had taken possession. If Axim had remained in Portuguese hands it might have formed the base for an expedition to force the Dutch off the Coast; after the fort had been captured, all that mattered was to prevent anyone else seizing it, and no serious risk of that developed during the next forty years. Neglect is demonstrated nearly four years after the capture, by lists prepared when a Dutch Governor handed over to his successor. A startlingly small number of guns is disclosed: four brass twelvepounders, two brass three-pounders, a brass mortar (to fire stone balls of twenty-four pounds) and two iron two-pounders. The Portuguese must have left many more cannon, but probably some had been damaged by the bombardment and others worn out. The seven brass guns of 1645 had almost certainly belonged to the Portuguese, but would have been far more durable than iron pieces. Yet they too disappeared before 1682; they may have been broken up for sale as scrap - the Africans bought enormous quantities of brass - or perhaps the Dutch considered them too good for Axim and took them to a more esteemed fort. In 1682 Barbot saw twenty-two iron cannon and a few small guns (pattarereos). About ten years later, an officer of the Danish Company learnt that there were thirty-six cannon; the increase is plausible, since the Dutch had meanwhile become exposed to danger from the Branden-

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burger Company and its African allies, and a strong pro-Brandenburg faction had arisen among the people of Axim. Similarly, the previous moderate re-arming may have been the Dutch response either to Swedish and English interest in the district, or to African dissensions now forgotten. The first question to consider is to what extent the Dutch retained the Portuguese fortifications, which must have been very strong towards the land but proved hopelessly inadequate against heavy attack by sea, not only in 1642 but again on two other occasions during the same generation. Actually defence against a large number of ships could never have been feasible because of the shape of the promontory; it runs straight out to sea, ending in a point, where there was no chance of mounting enough guns to repel a fleet. Only if the fort had stood behind a crescent of batteries, placed on headlands and islands (as was proposed long after), would there have been any reason to build fortifications which could be held against more than one or two ships. The Portuguese seaward walls obviously fulfilled that requirement, and therefore would not have been replaced, nor greatly improved. Repairs after bombardment cannot have involved much work, because
the walls are freestanding only at the top; for most of their height they form a
revetment or facing to a platform upon which the fort stands. In fact, all the rock
near the summit of the promontory must have been levelled, and the material so
obtained banked up above the lower part of the slope. The Portuguese could not
have maintained the large garrison of their later days at its recognized efficiency
unless they had already constructed the platform, more or less to its present
dimensions and shape; the Dutch may conceivably have extended it, but the shape
was enforced upon them and their predecessors alike. The extreme end of the
promontory (Fig. 18; Pl. 61) dropped too low and was too pointed to be usable as
a battery; the platform therefore stops short of it, keeping the uniform high level
(which gave the guns a longer range), and ends in a broad curve, so that as many
guns as possible could fire both out to sea and along the coast. The parapet here
has evidently been reduced in height, probably in British times; the next stretch on
the south side is Dutch, of non-military character, for it contains lancet openings
(now blocked) such as are characteristic especially of the late seventeenth or the
eighteenth century. A buttress against this part of the exterior is also presumably
Dutch work, added to counteract the outward pressure exerted by the weight of a
building behind the wall-walk. Elsewhere the face of the walls leans only slightly
inwards. The north and south walls (strictly north-north-west and south-south-
west) take a straight course from the battery to the inward corners of bastions at
either end of the

FIG. 18 Axim: Fort St Anthony. Upper plan, z79o-z
Stair from the beach to the outer yard Stair to the upper town or the garden Gate
in the small outer work Shelter
Gate in the outwork Gate of the guard Stair to the bastion Soldiers' kitchen Shelter
Flagstaff
Commander's kitchen over a storeroom Stair to the administration office Lobby
Larder Apartment Commander's hall Commander's bedroom Balconies Wooden
bridge above, leading from the hall
A flat roof A sort of balcony Apartment Apartment Cistern Stair to the old
administration office
Buildings 13-17, 20, 22, 23 are all of three storeys, the lowest mostly used as
storerooms,
the second partly inhabited by servants and garrison.
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landward front; these bastions command the approaches, not only from inland (east) but also from the beaches, which meet the promontory almost at right angles from the north and south. The promontory would have been indefensible without the bastions, and no alternative to them could have been considered; they must have originated when the Portuguese modernized the fortifications, a whole lifetime before 1642. And, however much the bastions might have afterwards been altered, their final outlines are Portuguese, almost beyond question, and the Dutch cannot have changed the siting of the inward corners from which the seaward walls inevitably began. Nor can the walls have met towards the end of the promontory in a manner very different from the present curve, while the straight intervening course is the easiest and the best that could have been devised. No doubt the face of the wall, and the free-standing upper portions, must have been renewed by the Dutch (probably more than once, because the local stone was notoriously prone to decay), and in the process the exterior may have been brought outwards a few feet, but the shape in general must be Portuguese. Unquestionably it has remained unchanged since 1679, when Barbot drew the fort from three miles out at sea (Pl. 58b). A shelf on the north slope had already been made into a service yard, which is reached from the main courtyard (Pl. 63b) by a doorway and steps; it is enclosed by a rather thin free-standing wall, containing a few slits for small-arm fire. The work appears Dutch, but may have replaced a Portuguese wall, which the bombardment would almost certainly have scattered into the sea.

The earliest representation of the landward front is a view engraved in 1709 (Pl. 59a), but it conflicts with Barbot's descriptions of the fortifications as he saw them in 1679 and 1682; obviously they had been amplified to match the change in political conditions. Barbot remarks upon the absolute authority the Dutch commander was able to exercise over 'the whole country of Axim', but shortly after his visit the newly founded Brandenburger Company began to build its headquarters at Princestown, only a few miles away, and so interposed a hostile power between Axim and the other Dutch possessions. By 1687 competition for trade and bases had led to open warfare, in which African allies aided the troops of the rival Europeans or took independent action, tribe against tribe, and even if neither Company encouraged such aggression the forts inevitably became involved. The Dutch, being the weaker party in the district, could not evade the obligation to provide shelter beneath their guns for the local population in case of defeat by an invading army, or for their own adherents in case of a rising by the dissident party within Axim. As at other forts, the solution adopted was

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to build an outwork, parallel with the existing main fortifications, and far enough away to make space for the refugee families and their goods; the men were expected to defend the new wall, in which, consequently, slits for small-arm fire
are placed as close together as was practicable (Pls 6oa, 62b). In the space behind, there had previously been a rockcut ditch (eight feet deep according to Barbot), but this was now filled to the brim, even where the drawbridge had crossed; the width of the ditch is unknown, but the outer edge cannot have been as far out as the new wall, which surely must have been built on the rock beyond the made ground. At the time when the ditch was filled up, or shortly after, the Dutch also made some conspicuous though comparatively slight alterations to the fortifications behind it, and so put them into the present form (P1. 6oa,b). Otherwise, however, these fortifications appear to have remained virtually unchanged since the years when they enabled the isolated Portuguese garrison to withstand a far worse menace - seeing that the Dutch occupants might now reckon on help coming quickly from Elmina if an attack seemed pending. Here again the shape of the ground could have allowed no other design; the two bastions were the inevitable means of ensuring the safety of the seaward walls, and the intervening space was so short that it could best be filled by a straight wall (P1. 62b). The central gateway bears an ornamental facing of Dutch brick, probably added when the drawbridge was removed, but the arch itself may be much older. The solid portions of both bastions are unquestionably older, and any refacing which may have been undertaken has left unchanged the outlines shown on the engraving of 1709 (by which time the buttresses against the south-east bastion had already been added). The guns on that bastion, however, then fired through open embrasures, over which arches were built at some date before 1786; with the slits for small-arms near the new top, the parapet became precisely like that of the north-east bastion (P1. 62a). There the parapet has been left unchanged since 1709, by which time it had been re-aligned so that it cut across the apex of the bastion, leaving a bare platform to project uselessly (Pls 59, 6o). This extraordinary alteration undertaken perhaps as a cheap way of repair - could not have been militarily permissible before the construction of the outwork, which bends round the foot of the bastion. Here the wall of the outwork gives the appearance of an outer bastion (P1. 6ob), because its top remains level though the ground outside drops towards the shore; one effect was to block the view from the bastion apex, which therefore became superfluous, and really should have been cut back. The outwork wall ends just beyond, by turning inwards to the shoreward face of the bastion (where it is pierced by a modern doorway but used to be un-

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interrupted); supporting fire could be given from the service yard. Quite a different scheme was applied at the opposite end of the landward frontage; instead of overlapping the south-east bastion, the outwork wall joins its nearest outer corner, though in order to do so the course had to take an inward slant. The change of direction occurs at the gateway - a round arch in a rectangular frame (P1. 62b) taller than the rest of the wall, which barely exceeds the height of a man. An external flight of steps descends to what is now open ground outside the fort, but there used to be two successive works beyond. In 1679 and 1682 a 'spur'
existed just outside the ditch; Barbot says it was entered up steps and through a guardroom, also that it could 'contain twenty men', probably meaning that the walls were provided with as many slits for small-arms. If so, the spur he saw may have been substantially the same outer work as was represented on the views of 1709 (P1. 59a) and 1786 (P1. 59b) and the plans of 1750, 1786 and 1790-i (Fig. 18). All these agree in showing a spur of the conventional shape - a blunted triangle, most of the end wall being occupied by a gateway (which, from the style, might have been Dutch of about 1650-80). The spur was slightly raised above a terrace (the 'outer yard' of Fig. 18) which began on the south at the outer wall and extended far outwards, supported by a masonry revetment; the view of 1709 shows so many trees growing that the whole surface may then have been a garden, though on the plan of 1786 the area is called simply 'the open space outside the gate', and the garden of that time lay away to the north. The terrace, although apparently unfortified throughout the eighteenth century and even in 1682 (to judge from Barbot's silence), seems too costly a work to have been built for other than a military purpose. The guess may be hazarded that the Portuguese left it uncompleted, and that the Dutch, being unable to defend such a large outwork, substituted the spur designed to be held by about twenty men; in 1645 the Dutch garrison actually numbered twenty-three, but may have been under the established strength, especially since thirty muskets were held.

The Portuguese buildings inside the fort must have been of considerable extent to have housed the obviously large garrison and contained the great amount of booty which the Dutch found. But no remnant of Portuguese construction seems to have been preserved; one or other of the recorded bombardments may, of course, have inflicted damage beyond repair. In 1646 a building of mud, or of stones laid in mud, seems to have contained the office and residential accommodation. The Governor at Elmina, in fact, received a message that 'a great part of the N. part of the fort has fallen owing to the great rain which falls there daily. The commerce room was made with the same work, and accordingly I ordered that this fallen work should be restored with a high and proper wall, and the commercial staff be brought to the preacher's room,' which his transfer to another fort left vacant. The restoration may have produced the first of the thick walls, consisting of stone laid in good mortar, that constitute the large building between the main courtyard and the seaward battery. The existence of this building is not documented till 1682, but the style points to the middle of the century. The structure is obviously Dutch throughout; Dutch bricks coign the doorways and windows, which are all round-arched (P1. 63b) except those inserted later (P1. 61), and Dutch bricks line a cellar outside the original west wall (though beneath a later porch). The building is divided into a two-storeyed shallow western and a larger eastern portion, in which continuations of the same two floors overlie a set of rooms roughly level with the cellar. These lowest rooms are supplied with windows, as well as doorways, but all facing towards the sunken courtyard, and the stillness of the air within must have restricted their use.
to storage, except perhaps for the room nearest the south, from the back of which a ventilating shaft passes under the wall-walk to the exterior of the fort (P1. 6 i, under the left side of the balcony). The rooms higher up vary greatly in shape and size; the best are on the top floor, which seems to have been re-planned at a fairly late date. And, long before that happened, the entire western portion must have been replanned to take full advantage of a greatly increased width of frontage; the original building had not included the present north-west and south-west corners. Barbot's descriptions of 1679 and 1682, and his view (P1. 58b), show that the eastern portion then bore a tall roof with gables at north and south above sheer walls - a third gable of the same height, but much narrower, projected at right angles and covered a wing, which corresponded only to the present centre of the western portion. A few orange trees grew just outside, in the middle of the battery (where Barbot saw eight cannon mounted). The building, though Barbot calls it the 'factor's house', must already have been too large for the commander's use, even though the terms of his appointment obliged him to supply meals regularly to his officers. Philips, a visitor of 1694, gives an apparently accurate statement of the facts: 'In the midst of the fort is their warehouse, kitchen and lodging of the soldiers, over which are three or four small rooms for the factors. A great part of the roof and wall of that wherein they dined was fallen down.' The large dining-hall (Fig. 18.16) of the top storey evidently did not yet exist; probably it was formed when a new roof was laid, which must have happened soon afterwards, because the view engraved in 1709 shows a roof of much lower pitch than in 1679. Probably the change was en236

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forced by the extension of the western portion, when the corners were brought into alignment with the eastern portion;3 the very scanty stylistic data which escaped later alterations suggest that the work must have been done long before it is first recorded on a plan of about 1750. At the centre of the west frontage is shown a doorway (now behind a porch but then external), by which the officers entered their quarters. The eastern portion at the same level - there the intermediate storey may already have contained the administrative offices (as in 1791), and was directly reached by an external staircase (P1. 63b; Fig. 18.25), placed against and parallel with the frontage. The steps and landing are drawn with a parapet, which probably has not been altered since, though the plan does not indicate the existing lancet openings. The staircase looks as though it could not be much older than 1700, but the manner of its junction with the wall cannot be ascertained, because about 1950 the entire east front of the building was doubled in thickness by applying concrete externally (to prevent imminent collapse). A cistern (24) under the courtyard, adjoining the foundations of the building, must be among the earliest Dutch works, if not actually of Portuguese origin.

The seaward building seems to have been the only permanent structure inside the fort as late as 1694; Barbot and Philips mention no other, and certainly would have done so if there had been any worth mentioning. (No implication, however, should be read into Barbot's remark that the fort looked, from out at sea, 'like a
large lofty white house'; he can only have meant that the whitewash blurred the
distinction between the isolated building and the bastions behind it.) But even by
that date, 1682, overcrowding must have endangered the health of the occupants
and gravely affected that of the less privileged juniors and the soldiers. The
personnel had risen from a total of twenty-nine on the nominal roll of 1645 to
roughly fifty on Barbot's estimate, shortly before the Brandenburg menace
developed; at its height, some ten years later, an unofficial but plausible list
enumerates sixteen civil or technical staff and forty-two military, whereas the
Corresponding figures in 1645 had been six and twenty-three respectively. The
previous standards of accommodation could not have been regained without two
or three times as many rooms, double the barrack space, a little more storage, and
presumably quarters for an increased establishment of slaves. Moreover, the
growth of the overseas slave-trade may have created a need for larger prisons to
hold men and women awaiting shipment.
The extension and internal rearrangement of the seaward building cannot have
done more than slightly improve the officers' living conditions. All requirements
were eventually met, however, by the addition

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of a single great building behind the landward curtain-wall (Pls 59b, 60a). The
ground floor, backed against the wall, reaches from the northeast bastion to an
open-air staircase which may already have led from the courtyard to the south-
est bastion. At the centre, the through-way to the gateway of the fort is no mere
passage, but widens northward to form the guardroom. Elsewhere the plan has
since been altered; conversion into a prison, towards the end of the last century,
involved the shifting of one partition and possibly the removal of another.
Previously the space towards either end appears to have been occupied by one or
more storerooms, or possibly slave-prisons - the height would have given some
compensation for the lack of through draught, and heated air might have escaped
between the boards of the floor above. The second storey stands level with the
wall-walk, and is so tall that the windows could be placed to clear the parapet; the
similar windows at the back (overlooking the court) were fewer than modern
standards of ventilation require (and their number has recently been increased).
Most of the length was eventually taken up by a single room (Fig. 18.2o); this
must have been a barrack. Strong cross-walls were required only to support a pair
of towers (22,23) which stood above either end, each containing one small room
suitable for an officer or two.
Comparison with the seaward building indicates that a great many years had
passed before the completion of the landward building in its eventual form. Even
before the construction of the second storey the interval of time had been long
enough for round arches to have become obsolete; the doorways and windows are
rectangular and covered by segmental arches so low as to be virtually flat. And, in
fact, the view engraved in 1709 (Pl. 59a) proves that none of the second storey
had yet been built except perhaps at the south end, where a tower is shown,
corresponding well enough in position and shape with the present south tower,
though lacking the east window which has been conspicuous since, at any rate, 1786 (P1. 59b). On the plan ascribed to about 1750 the entire building is represented, the front at the second storey, the back and interior on the ground floor; the interior is divided into a central passage and a long room on either hand, without the cross-wall necessary to support the side of a tower. Since, however, this plan is so casually drawn as to omit all the partitions in the seaward building, there remains a fair chance that both towers already existed. If so, the tower shown in 1709 may have been the first portion of the present building to be completed, though without the window. The whole building was of very poor construction, and the tower especially might have needed some rebuilding before 1786. It was recently found to be in such condition that it had to be taken down and entirely rebuilt.

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The north tower was removed, presumably for the same reason, some time in the British period; it was replaced (with approximately the same dimensions) a few years ago. The roofs sloped steeply, and must have looked unseemly till parapets were added, between 1786 and the middle of the nineteenth century; the modern parapets, lightened by lancets, are copied from that which crowned the south tower at the time of demolition. Wooden stairs (now replaced in concrete) eventually rose from the wall-walks to the towers, which originally may have been reached only by doorways giving on the intervening roof that over the second storey. The slope of this roof had been made inconspicuous by a similar parapet as early as 1786. At the centre of the front the parapet came outwards and enclosed a projection (Fig. 18.21 - now demolished) which spanned the wall-walk, like 'a sort of balcony', as the plan of 1791 describes it; in 1709 the wall of the fort had risen here to form a gable, in which a bell hung, and the new projection could likewise have housed the bell. But that does not seem a sufficient motive for a disproportionately large shelter. Being vaulted over, it could not have contained a stair, though a ladder probably stood against one side. For there was no stair up from any part of the second storey, although the roof served as a thoroughfare. Not only did it give access to the tower rooms, but also, through a gap in the parapet, to a wooden bridge (i9) which stretched across to the top floor of the seaward building, where one of the windows of the hall had been deepened to make a doorway. The bridge is first marked on the plan of 1786, and makes its last appearance on a sketch of 1867.

Balconies across the wall-walks north and south of the seaward building were added between 1750 and 1786 (Fig. 18.18; Pls 6ob, 6i, 63a); they open off the hall and the commander's bedroom, in the walls of which rectangular doorways were inserted. The balconies rest upon and are surrounded by brick arches; the roofs sloped outwards, banked up upon triangles of brickwork. (In the British period the balconies were enclosed by walls, but the arches and the wedge-shaped openings in their parapets have now been unblocked; concrete has been substituted for wooden floors.) Another addition of 1750-86 was a staircase (Fig. 18.12) applied against the west front of the building; the steps rose eastward across an original
window (now re-opened) of the lower northwest room and ended, well beyond the centre of the wall, at a landing from which a rectangular doorway led into an ante-room and so to the hall. (The ante-room was afterwards partitioned, by means of a timber frame packed with loose Dutch bricks, but has now been opened up again.) A view published in 1817 gives the latest representation of this old stair, which seems to have been replaced soon after by the present stair.

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The couple of steps now visible are preserved as specimens of the many — about half the original total — uncovered in the 1950s; they had been levelled up to form a terrace (now shortened). The upper steps and the landing had been demolished to the ground, in order to clear the way for a porch, central to the frontage, and necessarily entered from the south because the new and wider staircase rises from the west to a landing above the porch. The use of Dutch bricks seems to date the construction before 1872. The rectangular doorway at the top must have acquired its present shape on the same occasion, but a western doorway, which gave on the terrace, may have been converted from a window only when the British lined the whole frontage with a veranda. The last century and a half of Dutch occupation passed in relative tranquillity; except for the British in 1782, no powerful enemy threatened the fort after the dissolution of the Brandenburger Company in 1720 and the death, some years later, of its principal African ally, Couny. Smith, in 1727, saw three guns on each landward bastion and five on the seaward battery. But an official Dutch report of 1804 discloses that the fort possessed a total of nineteen guns, all absolutely unfit for service; there was scarcely any provision for defence towards the sea, but the landward fortifications were in good condition and might, it was thought, be held by small-arms alone. This state of affairs probably continued. Indeed, the few guns that still remain, iron cannon mounted in the seaward battery, may even have been among those inspected and condemned in 1804; the Napoleonic war must have prevented immediate replacement, and during the subsequent peace at sea the only use that could be foreseen for these guns was to salute ships.

There is evidence that one slight change of site was at least considered. A gently sloping expanse of rock, roughly trimmed, stretches east and west from the foot of the south-east bastion to a distance almost equal to the bastion's width, and then drops straight-edged to uneven, soil-covered ground. Three explanations are equally possible: the area might have been prepared to receive the present bastion but the site was changed; an earlier bastion may have been projected or built upon this site; a still earlier salient, e.g. a tower, may have been either projected or built there. Although Barbot observed in 1679, 'On the SE side is a battery which the rain has beaten down,' he seems to have meant only that the gun platform needed reconstruction.

The view of 1786 (P1. 59b) suggests a total of twenty-one rather than twenty-two slits. The plan drawn on the same sheet of paper shows the two at the end, but only six on the south and five on the north — probably because there was not space for more than a token representation.
3 The doorway between the south-west corner room and the older room on the east (under Fig. 18. 14 and 17 respectively) was left with a sill a foot high, an absurd inconvenience (recently cut down) and therefore presumably a relic of the period when the doorway was exposed to the weather. Two vertical joints, uncovered during restoration work, are of doubtful significance, because they ran up only to man-height; one was found i i ft. 6 in.

AXIM: FORT ST ANTHONY
east of the south-west corner (measured externally), the other (measured internally) 4 ft. 4 in. south of the north-west corner and 5 ft. 8 in. north of the early window which was blocked by the stair of the late eighteenth century.

4 There are a few Dutch relics in the service yard west of the main courtyard, mainly of that period. At the south end a modern wash-house on the platform occupies the site where, in 1786 and 1791, the commander's kitchen stood above a storeroom. A recess in the west wall seems to have remained from previous buildings, shown on the plan of 1750; the shape suggests a latrine or a fireplace. Faded lettering painted on the wall, close by, became illegible after the 19408, when it seemed to read YEDoNwu. A two-line epitaph in Dutch is painted on the north wall opposite the head of a grave, but has become corrupt owing to frequent renewal, and the beginning of the second line may be lost. Search among records in Holland may enable the text to be restored from the present reading: WiLLEM SOFIRAR WAT COMY / SOO AXEN 1567. A correction of the date to 1867 would be appropriate to the brick gravecover, which rises coffin-shaped from within a curb; a tablet over the head may perhaps have been the original place of the epitaph.

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MOURI: FORT NASSAU
(Pls 57, 58a)
O WING to strong local support, the Dutch were able to found, in 1612, a small fort at Mouri, only three and a half hours' walk from Elmina, and to maintain it uninterruptedly throughout the remaining twenty-five years of Portuguese supremacy on the Coast. In 1623 the newly created Dutch West Indies Chartered Company took over. The name, Fort Nassau, was conferred in 1637. The fort was captured by the English in 1664, and recaptured by the Dutch in the following year. In 1782 it again surrendered to the English (being weakly garrisoned), but in 1785 it was returned to the Dutch by treaty. An official report of 1804 described it as 'one of the best and largest' as well as 'most important and most beautiful forts' on that Coast; it was, however, abandoned within the next dozen years. Most of the walls have since been demolished to obtain building material, and others have fallen as a result of erosion - which will inevitably cause much further destruction very soon.
The fort occupied a hillock of very soft rock, overlooking a beach to the south. The slopes were revetted by the outer defences, which enclosed an irregular quadrilateral of almost flat ground; this used to be lined with buildings one room
thick, around a courtyard, but their plans were considerably changed in the course of time, even though durable materials are said to have been used from the first in some inner buildings. The original fortifications, however, consisted only of earth, packed around brushwood, but the banks so formed were surrounded by 'very deep ditches'; three 'bulwarks' (bastions?) are mentioned, and a half-moon. Rebuilding on a large scale is reported in 1623-4 and in 1633-4, but if stone was used it must have been laid in mud instead of mortar. Consequently, one of the inner 'lodgings' and three 'roundels' of the outer defences collapsed between Christmas 1645 and June 1646, and were rebuilt in the same materials. That must have been a typical occurrence, and even after the fortifications had been clad in stone (some time before 1652) any percolation of water through the joints would still have caused widespread ruin. Sometimes the shape was altered in reconstruction, as may be seen by the great discrepancies between sketches drawn from much the same viewpoint, out at sea, in 1629 (P1. 57), 1637 and 1640, a plan and view which were probably drawn in 1637 though engraved in 1647, and a bird's-eye view copied about 1670 from an original probably much earlier than 1652, which would be its latest possible date. On all these representations the four straight curtains remain constant, but sometimes only three corners were provided with flanking-works; these varied in shape, from round to polygonal, as convenience might have dictated at the latest repair or reconstruction. The inner buildings, which stood quite separate from these outer defences, were designed like a manor house in Holland, with a series of rooms along all four sides of a courtyard (though not always continuously) and a tower at each corner. On the bird's-eye view the towers differ in height, those towards the sea being of three storeys and the others of two, while every block of rooms is single-storeyed. But in 1629 (P1. 57) there were two storeys of rooms facing the sea, and at other dates another such block was shown on the east side. The entrance may for a while have been on the west but otherwise consistently faced south, towards the sea, as in later times; the bridgehead across the ditch was at first safeguarded merely by a fence and gate, but afterwards was enclosed within an outwork, about the precise form of which the views are discrepant (again, perhaps, because the materials soon perished). Buildings outside housed the carpenter's workshop, the smithy and the bakery. Improvements to the fort are said to have been made in 1665 or soon after, but no data are known before 1682, when Barbot described the outwork as a half-moon, separated from the fort by a ditch and drawbridge. The curtains had been replaced in stone and mortar, and bastions of similar construction had been substituted for the round works. Barbot drew the inner building with three-storeyed towers; the rest of it seems to have been of uniform height in all four blocks, and to have stood well behind the inward face of the curtain except on the seaward side, where the wall-walk was broader. In 1704 this curtain is stated to have been as thick as the bastions at either end, and so could have served as a battery for defence against ships; in case of attack
by land, the outwork had been improved by extending it as a long triangular ravelin (P1. 58a). One or two blocks of the inner building seem to have already been reduced in height or demolished. The towers still formed the 'greatest ornaments and conveniencies' of the fort, which, except for Elmina, was admittedly the best the Dutch owned and had the highest walls.

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EARLY FORTS
With the expansion of Elmina Castle, less space must have been requisite at Mourii, where a policy may therefore have been enforced of demolishing parts of the inner buildings as they became derelict. The accommodation had been greatly reduced before definite evidence again becomes available, not so much from the plan of 1786, which is neither trustworthy nor particularly informative, as from that of 1790. The towers no longer existed, while the inner buildings were two-storeyed only along the south and at the north end of the west block, and there was no north block. The south curtain remained precisely as described in 1704, with an average thickness of about twenty feet - more than twice that of any other. To fit the site, the curtains differed greatly in length, and the bastions were extremely irregular in both shape and size, their longer faces varying between eighteen and fifty feet.

The whole east curtain still (i954) remains almost intact, rising from far down the slope and standing free only towards the top, where three courses of red bricks run below the rubble parapet. The nearer part of the south curtain is complete with the parapet, which consists of small yellow bricks, and includes slits for small-arm fire. Most of the west curtain is preserved up to the level of the ground within, together with a row of external buttresses (marked on the plan of 1790). The north curtain has been considerably eroded but can still be traced along practically its entire length. Of the bastions, that at the south-west corner has disappeared, and the other three are preserved only near the junctions with the curtains, which the flanks meet virtually at right angles. No intelligible signs of the inner building remain, except the north wall of the southern block, which formed the commander's quarters and may therefore have been structurally superior; the wall consists entirely of small yellow bricks, and contains a doorway and two windows, all of which are round-arched.

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CORMANTIN: FORT AMSTERDAM
(Pls 66, 67, 68b)
ENGLISH trading-post, which probably originated in 1631, is said to have been converted into a fort in 1638, but the venture did not succeed. In December 1645 news reached Elmina that 'the English ship Hope had twenty-four guns and many people on board, twenty of whom were stationed on land in order to rebuild the ruined fort' The work must have been completed or nearly so by 1647, when the chaplain went to Elmina and invited six Dutch officers to pay a return visit. Four years later another group of English merchants obtained a royal patent to trade, on condition that they fortified Cormantin; after ten years, the
ownership was transferred to the Royal African Company. In 1665, after heavy fighting on the more distant approaches, the English surrendered to the Dutch, who then changed the name to Fort Amsterdam. In 1782 the weak garrison scarcely resisted an attack by the English. The Dutch regained possession by treaty in 1785, but failed to keep the buildings in repair. Decay was far advanced by 1811, when the Anomabu, who were allies of the English, captured and wrecked the fort, which has never since been occupied. The ruins were cleared and conserved in 1951-6, primarily to restore the imposing aspect of the monument as seen from the road which passes beneath the inland side.

The fort occupies the summit of an isolated hill (PI. 66b), which on the south falls precipitously to the sea, while the slopes elsewhere are too steep for easy walking. By 1682 steps had been cut in the rock to improve the path up; it may already have led to a triangular spur, formed by the two walls known from a view of 1704 (PI. 66a) and plans of 1786 and 1790-I (Fig. 19), and still represented by a few scraps of masonry. The fort proper is entered through an archway in the north curtain (PI. 67a). The fortifications consisted of a rectangle of curtains, bastions at two corners, and round flanking-works on the other two. Of all these, only the north curtain (which is lower than the two-storeyed buildings within) and the bastions were soundly built. The rest were constructed with an earth filling between two walls of stone laid in mortar; consequently

FIG. 19 Cormantin: Fort Amsterdam. Upper plan, r79o-r

Outer gate, near which is: A shelter
Soldiers' kitchen Commander's kitchen Gate of the guard Small cistern Large cistern Granary raised on arch Latrine in front of soldiers' dwelling Corporal's and armourer's dwelling Sergeant's dwelling Powder magazine Great Hall over vaulted storerooms
Bedroom over vaulted storerooms
Larder Larder over vaulted
A large room storerooms
Under the bastion is the slave-prison Flagstaff
Shelter
Shelter
Room over storeroom Room over storeroom Room over the guardroom Orange Hall, over which is the soldiers' dwelling
Above room 14 is the quadrangular tower of the same size.

CORMANTIN: FORT AMSTERDAM
every crack that developed while the fort was abandoned has allowed the earth to pour out and caused widespread destruction. On the west and south the outer facing-wall has virtually disappeared, leaving scarcely any remnant of the round flanking-work at the south-west corner, and exposing the inner wall, which stands almost everywhere to the full height. On the west, one-storeyed vaulted rooms back the curtain (Fig. 19. 10-12). Along the south, however, a line of two- and three-storeyed buildings met the curtain; here the parapet was barely fifteen inches
thick, according to an official report of 1804. The east curtain, too, was lower than rooms behind; its whole thickness has been preserved (in some places only at the base, though now restored to an even height). No trace remains of a projection across the wall-walk - probably a balcony arch - outside room 17. The earth-filled portions must be ascribed to quite an early period, most likely to the rebuilding known to have been started in 1645 or to some rather later stage before 1661, when the ownership passed from the group of merchants to the Royal African Company. Claims against the Company, brought half a century later by the grandsons of Sir Nicolas Crisp, assert that he personally had spent at least the better part of £20,000 on building and maintaining the fort, and in view of Dutch hostility his defences must have been reasonably strong. They probably escaped serious injury in 1665, when the English garrison surrendered before the Dutch assault-force came to close quarters; at most, the north curtain may have been slightly damaged. The gateway, with its frontage of Dutch yellow bricks, looks as though it might have been built within the next twenty years, and the rest of the curtain seems contemporaneous. The bastions (with many embrasures, and slits for small-arms in the merlons) are probably Dutch of the same time. The south-east bastion alone was hollow, with a ventilator (Fig. 19.18) for the imprisoned slaves, and was reached from the courtyard by a passage vaulted with yellow bricks; the mouth of this tunnel bore a triangular block of stone, which is inscribed with the date [II]679 inside a pedimental frame. Another vault in Dutch yellow brick, over rooms o-i2, might have been constructed as a battery, supposing the west curtain to have been raised since; the need for guns would have ceased when the north-west bastion was rebuilt in the present form. The rooms (o-i2) probably formed the flat-topped building which, according to the view of 1679, stood on the same site but was tall enough for two windows or gunports to show above the curtain; the present height of the curtain does, in fact, seem greater than can have been strictly necessary above such a steep slope, and may not have been attained at once.

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Barbot, who visited the fort in February 1679 and again in 1682, drew it on each occasion from the sea; in the meantime it had already changed beyond recognition, through rebuilding which was not yet completed. In 1679 he wrote only a very brief description of the fort: 'It is flanked with four bastions, and in outline is built like a castle surrounded by flat-bottomed ditches, which are edged with thorns.' On the same day, he drew the north-west bastion in the form of a slim tower, rising high above the curtains; perhaps the round work at the southwest corner did not yet exist, though the drawing is imprecise on that matter. The inner building stood so far back as to leave space for a tree between it and the seaward curtain; it looked more like Moury (P1. 58a) than the present structure, because a two-storeyed block of rooms was joined at each end to towers of the same height. A taller and wider tower behind could also be seen projecting above the roof.
Barbot's view of 1682 (P1. 68b) proves that the bastions, the west curtain and the round work at the south-west corner had already been given their final shape and height, but the south curtain was not yet backed by a taller building. A view from the land, published in 1704 (P1. 66a), establishes that the east and north curtain, and the round work on the north-east corner, had reached their final shape and height, and shows a two-storeyed building along the south. The third storey, forming the tower at the west end, was added some time before 1786. A staircase in yellow brick had also been added against the courtyard frontage (P1. 67b); an almost illegible inscription, which fits a panel in the landing, seems to give the builder's name as Governor Swerts (1684-1689). The wall behind the stairs contains doorways and windows coigned with thin red bricks, which also occur in the parapet of the north-west bastion. This type of brick came into limited use in eastern England after 1630, but probably only through Dutch influence; in Holland red bricks were made contemporaneously with the yellow, and at Mouri, which was the nearest Dutch fort while the English held Cormantin, red bricks were used in conjunction with yellow, so that there is no reason to attribute those at Cormantin to the English. Indeed, the view of 1682 offers definite evidence to the contrary, by showing the pitched roofs of temporarily one-storeyed buildings throughout the southern part of the fort, where the upper half of the old walls must therefore have been demolished; the present wall, however, is homogeneous. Probably complete demolition could not have been avoided, because the present building required exceptionally strong walls to support the heavy vault over the ground floor.

The view of 1682 (P1. 68b) shows the two storeys of rooms behind the north curtain under construction, at any rate towards the east end.

CORMANTIN: FORT AMSTERDAM

where the shell of the upper floor had nearly been completed; probably the 'Orange hall' immediately west of the entrance was built not long after. In 1704 Bosman observed that 'a moderate charge would improve this fortress; but the commerce of the place not being sufficient to bear the expense, 'tis better to let it alone' The sole evidence for any later building is an inscription of 1770, which may conceivably refer to the tower. The inscription slab (251 in. wide, 181 in. high) fits the panel on the stair-head, and is of local stone; the surface has flaked, leaving only: OOR DEN E ... ECTEUR GEN ... sVWE ...

The text may be restored and translated: 'By His Excellency, Director General ... Swerts.

2 'Within is a very large square tower in the midst of it [the fort], designed to have a cupola on it,' so Barbot learnt from the engineer in charge of construction. In that period, a rectangle of any shape might have been termed 'square', while the phrase 'in the midst' would not necessarily imply that the tower was being built in the centre of the fort, where in 1786 there was an open courtyard. Barbot may have been referring to some uncompleted building beside the courtyard. The
project seems to be illustrated by his view from the sea (1732, Pl. 14), presumably a drawing made as a forecast. A bastion is represented at the south-west corner; behind the west as well as the south curtain are seen rooms on a second storey, uniformly designed, and a tower rises to a third storey under a cupola, perhaps in the centre of the fort, but it might equally be at the north-east corner. The large oblong building, shown unfinished in the earlier engraving behind that part of the north curtain, may possibly have been intended to go up an extra floor, but the views of 1704 place a little cupola between the entrance and the north-west bastion, probably above the 'Orange hall' (which actually retains the spring of a barrel-vault). As for other discrepancies, the Dutch engineer is likely enough to have told Barbot that he would like to add a storey above the west rooms and to substitute a bastion for the ill-constructed work on the south-west corner.

3 The slab, taken into safe-keeping many years ago by the Chief of the village below, is said to have been found among the remains of the seaward curtain. Beneath the 'WGC' monogram of the Dutch Company, and the date i770, are cut, in excellent lettering, the Latin words Horum aedificatorfuit Yan Woortman (or possibly, since a chip is missing, Voortman), 'The builder of these was Jan Woortman'; he also built the hall at Butre. The slab is of local stone, 17 in. wide by 16 in. high.

GAMBIA: JAMES FORT
(Pls 64, 65)

EUROPEAN competition on the Gambia followed a peculiar pattern, because this great navigable river allowed traders direct access to the interior of the continent; a ship drawing fifteen feet of water could sail a hundred and fifty-six miles inland. For hundreds of miles before it meets the sea, the Gambia runs through a flat country with pasture for domestic or wild animals and limited opportunities for farming. Around the head-waters are mountains rich in gold, and when European ships began to frequent the lower reaches, it must have been brought to them in increasing quantity; so, too, were slaves. The products of the lowlands also were in great demand - indigo, coffee, ebony, hides, wax, spices and ivory; in exchange, salt, iron, brandy and other European goods found a ready sale. In the course of time, European private adventurers and Companies placed a considerable number of trading-posts (most of them short-lived) upon one or other bank, where they could, however, do little to restrict the free movement of traffic up and down the river. But complete control, and consequently the power to levy charges on competitors, was obtainable by fortifying James Island, which lies some twenty miles from the sea. It is a slab of friable rock which scarcely projects above the river at high tide, when it is reduced to a length of some three hundred and sixty feet and an average width of about two hundred feet; there is no spring on the island, which, indeed, offered no attraction other than its position. The distance to the north shore is a mile, with deep water at the middle; southwards a depth of thirty feet obtains for over a mile, but then follows a stretch of comparable width where the mud lies only a foot or two below the surface at low tide. Hence the cannon on the island could efficiently command both
channels. Frequently, however, the Company in occupation could not afford to
maintain a garrison strong enough to prevent the passage even of the light-armed
merchant-ships belonging to its competitors, and scarcely ever was the island so
well equipped and manned as to resist a determined attack by ships of war. Many
such

attacks were made, for various motives; sometimes a rival nation wished either to
put its own Company into possession or to destroy the fortifications and so gain
freedom of trade, sometimes privateers or pirates wanted to loot the storerooms,
and might hope to be paid a ransom for relinquishing the island to its previous
owners, or else would demilitarize it in order to facilitate future exploits.
The original builders of the fort were Baltic Germans, servants of a Company
newly founded by the Duke of Courland, who ruled a territory roughly
corresponding to the present Soviet Republic of Latvia. In 1651 they bought St
Andrew's Island (as they called it) from the Chief who claimed its ownership -
there were no inhabitants - and immediately began to build. They used the local
sandstone only for the fortifications; buildings of wood and thatch served as
lodgings, barracks, storerooms, granaries and a church (for a Lutheran pastor had
been sent out). A pictorial plan, formerly in the Courland archives, shows these
huts, large and small, rectangular and round, dispersed over the whole island, far
enough apart to diminish the risk of fire. A long jetty ran out from the north-east
shore, while a small landing-stage on the south-east, opposite the entrance of the
fort, must have been used by canoes and rowing boats to fetch daily supplies of
fresh provisions and water - the river here being salty from the tides. The fort was
of the simplest, most orthodox plan, a square of rather thick curtains (perhaps
filled with sand between faces of masonry), flanked at each corner by a
sharpapexed bastion; the north and east bastions were equidistant from the jetty,
but since only one gun was mounted on each face they cannot have commanded it
very effectively. Inside the fort was a courtyard, on three sides of which stood a
continuous wooden building, isolated from the curtains.
In 1659, transfer to the Dutch Company was frustrated when a French privateer
captured the island, and left after inflicting much damage. It was regained for
Courland in the following year, but surrendered to an English naval force in 1661,
and was re-named in honour of the heir to the throne (afterwards James II).
A plan of 1680-2 or somewhat later, published with Barbot's text, indicates that
the outline of the fort had not been appreciably altered; moreover, the fact that the
defences lapsed into decay by 1690 may be taken to imply that the original
structure had not yet been replaced. Some, or all, of the bastions were hollow, and
brick-lined, which may have been an English innovation. Barbot's description of
1682, which records this detail, alludes to spacious buildings where the
accompanying plan is blank. The officers, one must suppose, lived within the fort,
in rooms which can scarcely have been of very recent construction if they
EARLY FORTS

were among the 'houses and quarters' which needed 'rebuilding' ten years later; that word may, however, have been loosely used to mean only renovation of the roof and woodwork, and possibly the buildings in question were all outside the fort. The fort is recorded to have contained storerooms (presumably on the ground floor), 'magazines' (for valuables, no doubt), a powder-room and a cistern. The soldiers, artisans, clerks and slaves lived in huts outside; the free population nominally amounted to over sixty white men and almost as many African mercenaries, but half of the total was usually dispersed in out-stations or afloat in small vessels. The entire shore-line of the island had been both consolidated against erosion and fortified against attack by a palisade of thick logs; moreover the outline was much less irregular than before, apparently owing to the reclamation of ground previously below highwater level. At the three main corners the palisade curved outwards, making a horseshoe-shaped battery with embrasures (five or six in each, according to the plan). Other guns were similarly mounted along the intervening straight portions; it must have been easy to climb through an embrasure, but the only regular passage through the palisade was at the jetty. The total number of guns is stated as sixty or seventy, exclusive of several which had no mounts; the plan shows only eighteen upon the bastions, so that the majority would seem to have lined the palisade. The island as a whole ranked in 1682 as 'the next best fortification to Cape Coast Castle' of the Royal Africa Company's strongholds. But only eight years later, the defences were largely in bad condition.

In 1692 the fort was described as 'almost new-built' Three years later, when there were seventy-two large cannon, mounted, and thirty other guns, the garrison ignobly surrendered, on demand, to a French naval squadron, although they had plenty of ammunition, food and water. The French evacuated them, and themselves sailed away (bound, by their orders, for South America) after a month's stay; four of their last days were devoted to wrecking the guns and laying mines, which were then exploded with devastating effect (on August 22nd, 1695). Meanwhile someone drew a plan of the island, known from two engraved versions, the earlier of which was published by a member of the expedition, together with a brief, and not altogether compatible, description. The shore defences of 1695 seem to have been the same as in Barbot's time. Half a dozen rectangular huts, scattered over the island, housed the soldiers and slaves, and provided a forge, a butcher's workshop, and a boiler for the wax which was one of the principal exports. The officers lived inside the fort, in buildings placed against the north-east and south-west curtains, while the Governor's quarters stood well behind.

GAMBIA: JAMES FORT

the north-west side, completely isolated except at the south corner, which adjoined a square tower. Across the courtyard, the powder magazine and a storeroom were backed against the south-east curtain, on either side of the gateway. But for the fact that neither the magazine nor the cistern was proof
against bombardment, the fort would, in French opinion, have been impregnable. The bastions had been widened, and their fire-power thereby enhanced; they were now cased in brick. Their length had not, however, been proportionately increased, because each bastion terminated bluntly in two very short facets. If the sides had met at a sharp apex, as the stonework had done, the length would have been excessive; the blunted form, therefore, was again adopted in a subsequent rebuilding (Fig. 21).

The English re-occupied James Island in 1699, but such repairs as they made had probably to be done again after the French once more took the island in 1702. Breaches in the curtains remained open till 1703-4, when the fort was reconstructed in an extraordinarily casual manner, probably as a temporary measure. But if the Royal Africa Company seriously intended soon to make good the defects, events frustrated the scheme. French privateers again captured the island, in 1704 and 1708, and although they did little damage to the buildings (at any rate on the second occasion), the financial loss was very heavy.

Discouragement in London is reflected by the reduction of the Company's personnel on the Gambia, from fifty-five in 1705 to thirty-four in 1708, and by complete withdrawal from James Island in 1709. The condition of the fort at that date is known from the plan (Fig. 20) and description by a private trader, whose aim was to expose the Company's misdoings. Reading between the lines, it would seem that the buildings had not been altered since the reconstruction of 1703-4, when two of the bastions must have been widened, and all of them truncated, while the curtains had been made so wide that rooms could be placed upon them, and did not drop vertically to the courtyard but were bordered by shelves ('walks') of some intermediate height. Probably the quickest method of reconstruction had been adopted; collapsed ruins of the defences may have been encased within new masonry, set farther apart than the old faces, and the intervening space seems to have been filled with rubbish and sand. This 'dirt', as the trader calls it, remained exposed in the bastions and curtains, which should, of course, have been covered with a waterproof paving to prevent seepage. The walls, he says, were 'about 17 feet high and of an answerable thickness' - a phrase which implies that the 'walks' could not be regarded as extensions of the curtains, because in that case the thickness would have been disproportionately large in relation
The Common Burying Place.

A Small Waik.
The Stairs to go up into
the Fort
19
00
ras Fort. Plan, i708-9

EARLY FORTS
to the height. The walls were 'built tolerably well with small sandy stones cemented with the lime of the country, which proving very strong makes a firm macerial [walling] that is able to endure long battering'
But, however good the masonry, the design of 1703-4 was makeshift. The bastions especially were inexcusable, as the trader gleefully pointed out.
Every bastion ought to be so built as to be able to defend that side of the face of the next bastion, which is in the like position; instead of which, no bastion in the fort described, for want of an angular termination, according as it is pricked [i.e. marked by dotted lines in the plan], is able to beat off any assailants that shall attack the extreme side of the next bastion, which ought to have ended in an angle, as the dots direct. Therefore, as the faces of all the bastions terminate alike in flat sides, and being wholly unable to defend one another, nor having other works to supply the deficiency, an enemy may make their approaches northeast, southeast, northwest, or southwest, and no bastion shall be able to flank them, so as to do execution. Besides, the northeast and southeast bastions are so out of all proportions, as you see by the figure, that it is scarce in the power of a skilful engineer to assign any other reason for such gross irregularities besides the ignorance of the builder.
There were twenty-one guns in the fort, 'so unserviceably mounted upon old rotten carriages that in time of need they would prove but harmless scarecrows to any resolute assailants' Outside to the north, ten guns lay upon timber with their muzzles in the air to fire salutes; seven others were 'scattered on the ground in several places, as if totally neglected'
The inner buildings were of stone, but all covered with straw, so that an enemy, once landed upon the island, which they may do easily in the night without danger, have little occasion for any other trouble than to cast a spurred grenado into the thatch, which must infallibly fire...
the houses and force all within the fort to jump over the walls, to escape the fury
of the flames ... the fort not being large enough to afford any security to those in
garrison under such an extremity, as was once manifest by experience, in the year
of our Lord 1703-4, when the thatch taking fire by lightning or carelessness
forced those within to quit the fort.

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GAMBIA: JAMES FORT
There was no magazine. Powder had to be kept in the thatched 'houses', although
in one bastion could be seen 'a damp cavity, which I suppose originally was
designed for a powder-room, but being covered only with dirt, without either arch
or tarras [waterproof cement], it is rendered so unfit for the aforesaid purpose, that
when it rains, it would not only damnify powder, but any other goods or
commodities that should be lodged therein' The old cistern (already decayed in
1695) must have become unusable, leaving the fort 'without a tank, or any other
conveniency for keeping so much as one day's water'; all of it had to be ferried
from the mainland as required.

After four years of neglect, the ill-built fort was not much better than a ruin when
the Royal African Company recovered it again in 1713; the inner walls had
become almost irreparable, two of the bastions were found to have been blown up
from ground level, and none of the thirty-six guns remained serviceable. A
rebuilding, begun in 1714, made the fort habitable after four years. A year later, a
Welsh pirate captured the island and dismantled the fortifications, but the
structure in the main cannot have suffered greatly at his hands; the ensuing period
of abandonment probably caused worse damage. In 1721, the Company re-
occupied the island and made the necessary repairs. Four years later, however, the
powder magazine accidentally exploded, killing eleven of the nineteen Europeans,
and, no doubt, wrecking the buildings in which they resided. The fort was again in
reasonable condition by September 1726, when William Smith, the Company's
surveyor, arrived and drew it. It was also virtually in its final shape; a comparison
of his plan and view (Pl. 64) with the later surveys (e.g. Fig. 21) shows only a
few minor changes, apart from the addition of a huge double cistern (9), built
above ground against the exterior; its walls stood as high as those of the fort and
carried a walk and a parapet, interrupted by gaps for small-arm fire. The cistern
was built after 1749. It soon leaked badly, as Justly Watson's report proves; on his
arrival in 1756, 'just after the rainy season was over, there was not a foot of water
in the cistern (if it may be so called) Its walls, which remained complete till the
final destruction of the fort in 1778, must have needed periodic waterproofing
with tarras.

The bastions of 1726 were solid (except for the new powder magazine), and
externally six-faceted as they had been in 1695; the straight ends of 1704 had
been abolished, probably in 1714-18, by reverting to the previous design of two
short facets which met an obtuse apex. Watson thought this inefficient shape had
been adopted because the shore-line was too close, but the real motive is as likely
to have been economy during restoration. The whole fort, says Watson,
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was ‘erected on very indifferent principles with regard to the rules of fortification’
Also it had 'almost gone to ruin'; of the four artisans, who should have maintained
the structure (with the aid of seventeen slave craftsmen), the house-carpenter was
'an imposter', and Watson evidently felt no enthusiasm for the others. The
magazine (Fig. 21.8) struck him as 'the worst I ever met with; it is under the east
bastion,
Fi G. 21 Gambia: James Fort. Upper plan, Oct. 1755
i Entrance (below)
2 Long room
3 Council Room
4 Governor's room
5 Apartments
6 Shot
7 Latrine
8 Magazine
9 Cistern ro Flagstaff
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has no light or air; the barrels, I am informed, rot so much that sometimes in
moving they fall to pieces, and the powder is both spilled and spoilt - which is not
only expensive but may be attended with dangerous consequences' The height of
the bastions was about eighteen feet, including the parapet; the platforms were
paved but the surface consisted of 'here and there a flat smooth stone, and then
bricks or rough stones promiscuously disposed' On two sides of the fort they were
overlooked by the roofs of buildings (5) placed, in each case, on a shelf seven or
eight feet above the ground outside; that behind the north-west curtain carried a
row of officers' rooms, and the other, behind the north-east curtain, smaller
rooms, occupied in 1726 by soldiers but in 1732 by junior officers. An open
continuation of the shelf, called by Watson an 'area', separated the inward facades
from buildings around the inner courtyard, and widened beside the southwest
curtain, separating it from a square tower (on a site of a predecessor, marked on
the plan of 1695 and, as a ruin, on that of 1709). The tower, which carried no
guns, was indispensable in order to watch for approaching ships. It was forty feet
high, and four-storeyed, with lodgings above and (in 1732) the surgery on the
ground floor.
The tower, and a staircase down from the area, occupied one side of the inner
courtyard. On the other three sides stood a continuous twostoreyed block of a
uniform design, which can still be appreciated from the one wall that remains
standing (Pl. 65). Similar rectangular windows and doorways existed on both the
inward and the outward facade, and the battlemented parapet lined the whole
expanse of the virtually flat roof, which was waterproofed with tarras over the
wood. The storerooms on the ground floor were nine feet high, and ventilated by
short windows just below the wooden ceiling; the living-rooms above averaged
about eleven feet in height under the sloping roof. The Governor's quarters occupied half the upper floor, with a long room
(2) for his dining-hall; on that south-east side alone did the building meet the curtain. The most senior officers lived on the north-west part of the upper floor (5), one to either side of a room described (in 1726 and 1732) as 'the counting-house'

In 1726, after the fort had been restored, a new building was begun in front of the entrance; Smith represented the project in the form of a spur, the side-walls of which were to be attached to the bastions and converge outwards to a short end-wall. But when completed, shortly before 1732, the structure was totally independent of the fort, from which it was separated by a strip of open ground. The plan had therefore become quadrilateral, with an inward wall much longer than the outer, and the rooms along either side correspondingly diminished in width towards the outer end. The ground floor was devoted to storage, the upper housed soldiers and the permanent slaves or servants, a fact which explains how the fort itself came to be reserved for officers. The walls consisted of stone and mortar. However, the whole building was demolished before 1750, perhaps for fear it might be seized by some enemy and utilized against the fort; the site was afterwards left vacant. In substitution, new barracks were placed on the waterside. Incidentally, accommodation seems always to have been adequate for everyone, if only because personnel were constantly detached to take goods up and down the river (in sloops or long-boats) to and from the out-stations. Rarely can there have been half a dozen officers residing on the island, with two or three times as many soldiers.

Workshops and slaves' quarters, of wood and thatch, were scattered over the island; they must constantly have needed replacement, and may often have been burnt accidentally, or by enemies, with the result that a different set appears on every plan. Such buildings had now to be placed in closer proximity owing to a reduction in the extent of the island. By 1726, nearly half of the surrounding palisade had been swept away by the river, together with one of the rounded batteries, and another corner of the island was under water. The lost ground was never regained. In 1732 each of the two remaining batteries held four twenty-four-pounders. The palisades decayed without replacement till 1755, when Watson submitted a design for a brick parapet with embrasures, on a foundation of piles, constructed 'particularly before the two circular batteries and the battery between them', i.e. along the north-west shore-line. By that time, the piling and palisade alike had ceased to exist along the south-west shore, which was bordered, instead, with a continuous wall (on a thicker foundation to protect it against erosion); this formed the back wall of storerooms and of a yard for the permanent slave-women. In 1783, five years after the last destruction and abandonment of the fort, very little of this wall could be seen, whereas the two batteries and the straight defence between them stood up plainly above ground, though Watson had drawn these batteries as ruinous.

1 Probably, therefore, his scheme (or some other)
had been carried out, at least in part. One battery always retained the original horseshoe outline, but the other eventually described a much shallower curve across the front alone and returned with straight flanks; that shape is implied by Watson's plan of the decayed remains he saw of it. Its maximum width is shown both in 1755 and in 1783 as about eighty feet, or slightly less than the diameter of the horseshoe according to the plan of about 1721. That plan represents the other two bastions of the time with a diameter of roughly sixty-four feet, whereas the one which survived till the last was drawn in 1755 with a diameter of forty-three feet, and in 1783 of fifty feet.2

In 1778 the island was again taken by the French, who did not leave till they had wrecked all the buildings beyond chance of repair; wellplaced explosions demolished or cracked every wall of importance. The English re-occupied the island till as late as 1829, but never attempted to rebuild the fort; the garrison lived in hovels constructed out of the ruins. The growth of vegetation has since caused more damage. The only wall still complete to the full height (Pl. 65) is that along the north-east of the inner building. Most of the south-east curtain is well preserved, but the portion above the entrance has fallen; the gateway retains the round arch, though the jambs have become dilapidated. The bastions are ruinous.

1 Golb–ry, a French traveller who visited James Island in 1786, reported three round batteries by the water's edge, each containing eight embrasures (one more than there had been in 1721). If he could really see so distinctly, seven years after his countrymen had destroyed the fortifications, the two ruinous batteries Watson had surveyed must have been reconstructed; in any case, however, nothing can have been visible of the third, except perhaps some piles below high-water mark.

2 Smith's pen-and-ink plan of 1726 is limited to the fort, and for his revised version of 1727, known only from the engraving, he seems to have relied upon insufficient notes to add the remainder of the island, after he had left it. The two bastions in reasonable condition, and the tide-flooded remains of the third, are all merely drawn in outline, and identical in shape and size, with a diameter of roughly 67 ft.

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THE sheltered inlet in which lies the village of Butre, backed by densely wooded hills, can have offered only meagre opportunities for general trade but was a valuable source of timber; around 1700, too, the Dutch maintained a sugar plantation in a swampy valley a few miles inland. They had been preceded at Butre by the Swedes, whose trading-post may have endured only from 1650 to 1652, and perhaps did not occupy the same site as the Dutch fort, which was founded in 1656. Nine years later it submitted to a strong English force, but was
soon relinquished by treaty, and remained a Dutch possession till 1872, when it was transferred to the British. The unified colony had no occasion to maintain stations in close proximity to one another, and the administration preferred the larger and more easily accessible fort at Dixcove, scarcely three miles away, to Butre, where the population was hostile. Abandoned, the buildings there became overgrown with trees and lesser vegetation, which hastened the progress of decay; by 1898 they had 'long been in ruins.' In 1955-6 the fort was cleared and surveyed, for record. Surprisingly little indication was found of the substantial alterations which are known, from documentary evidence, to have been made in the course of the Dutch period.

The fort occupies the ridge of an isolated hill, composed of such soft material as to form loose earthen slopes, which are continually eroded; even with the aid of a path it is difficult to scramble up or down them in dry weather, and impossible if the surface is damp. Without the wooden steps shown on an old engraving (Pl. 68a), the Dutch would have had no means of access during the rainy season (though the draughtsman greatly exaggerated the steepness of the slope to either side). This stepped path was constructed on the southern slope, at the foot of which lay, and still lies, the village, spread along a flat expanse of sand obviously an ancient sea-bed - just above the shelving beach.

Owing merely to the natural advantages of the site, there may have been some justification for the statement, published in 1668, that this was 'a fairly strong fort.' Barbot, who drew it in 1679, from three miles out to sea, and actually went there in 1682, describes it as 'oblong, and divided into two parts, defended by two very indifferent batteries' which he had sketched in the form of very small bastions, at either end of a low-walled enclosure. Apparently they projected from diametrically opposite corners, but two more were soon added at the other corners. That the fort otherwise remained almost unchanged during the next twenty years might be surmised from the similarity of Bosman's description, written about 1701-3. 'On a very high hill lies a tilted, ill-designed fort called Batenstein - an elongated building divided in two, and strengthened with four useless little bastions, upon which are mounted eleven light cannon.' An engraving (Pl. 68a), which Bosman published in 1709, establishes one other minor change: the pair of twostoreyed buildings, adjoining the bastions, had been given flat roofs instead of the tall gables shown in the view of 1679. Another feature not previously represented (only because Barbot drew the fort from so far away) is the brick facing of the gateway, most of which still exists

FIG. 2! Butre: Fort Batenstein. Gateway, 1956 description, written about 1701-3. 'On a very high hill lies a tiny ill-designed fort called Batenstein - an elongated building divided in two, and strengthened with four useless little bastions, upon which are mounted eleven light cannon.' An engraving (Pl. 68a), which Bosman published in 1709, establishes one other minor change: the pair of twostoreyed buildings, adjoining the bastions, had been given flat roofs instead of the tall gables shown in the view of 1679. Another feature not previously represented (only because Barbot drew the fort from so far away) is the brick facing of the gateway, most of which still exists

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(Fig. 22; Pl. 69b) ; from the style of the lost finial, this must have been built in 1656 or not long after.

The earliest plan, datable around 1750 (Fig. 23), probably represents the same diminutive bastions as Bosman had disparaged, but they had become even less effective, since the previously separate buildings across the ends of the court had been linked by a set of rooms which overlapped the two northern bastions; the fort would have been rendered indefensible, but for the steepness of the hillside beneath. The slope here is, in fact, much more pronounced than on the seaward face of the hill, where, however, erosion must have developed just beneath the wall, which had therefore been safeguarded by two long buttresses; they still exist to either side of the entrance. A fairly general reconstruction was undertaken during the next generation; a plan of about 1786 shows it almost completed, and

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another dated 1791 (Fig. 24) records further innovations. The bastions were re-shaped, those on the east being amalgamated into a single battery, and that on the north-west considerably extended, so as to overlap the north curtain. Whether that curtain was retained or rebuilt is doubtful. The irregularly planned rooms behind it were rebuilt to make a rectangular block of two storeys, with a hall in the middle of the upper floor; the plan of 1791 records that this was 'built by Mr. J. Woortman in 1777', on the evidence, no doubt, of an inscription like... ....... ..", i:

FIG. 24 Butre: Fort Batenstein. Upper plan, Feb. 179r

1 Stair from hill to fort  11 Commander's bedroom over slave-prison
2 Sentry platform outside the gate  12 Hall of 1777 over dwelling of the
3 Bell  sergeant, corporal and armourer
4 Guardroom (below)  13 Room over granary
5 Cistern  14 Room over storeroom
6 Commander's hall over soldiers' lodging  15 Assistant's dwelling
7 Passage to battery  16 Shelter
8 Larder  17 Shelter
9 Garrison's larder  18 Flagstaff
10 Kitchen
that which the same Governor placed at Cormantin. Furthermore, the early rooms across both ends of the court seem to have been reconstructed, at least to some extent; the existing remains of the western rooms are stylistically comparable with the hall block, while on the east, where only a few ruined walls can now be seen, comparisons between the old plans indicate alterations and extensions, mainly completed before 1786 but some during the succeeding five years. Outside

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the entrance, also, work seems to have continued at that period; the straight flight of stone and brick steps was built before 1786, but the rounded steps at the foot are first marked on the plan of 1791. Very few subsequent alterations to the fort are known, the largest being the removal of a partition which had divided the structurally single room at the west end of the courtyard.

The condition of the ruins (Fig. 25) will now deteriorate very quickly, and the growth of vegetation will conceal and destroy them. The description that follows has therefore been written in greater detail than the intrinsic interest of a very minor fort could have justified; though, indeed, the trivial details of a building abandoned nearly a century ago may throw light upon practice at other forts which have been adapted to more recent uses.

The walls are built above a footing, at any rate below the south-east and south-west bastions and north curtain; it may exist all round beneath the fallen rubbish and accumulated earth. The bastions and the east battery slope steeply. The west curtain is vertical, and so is the west end of the north curtain for the length of the north-west room; along the exterior of the other north rooms the lower part of the wall slopes outwards beneath a projecting course of bricks at the level of the first floor a masked rebate, above which the wall is vertical. The east part of the south curtain 'is covered by a steeply sloped buttress, the addition of which occasioned the blocking of a gun-port that pointed in that direction from the flank of the south-west bastion. The west part of the south curtain is vertical.

The whole of the exterior is thickly coated with plaster, of a colour which was probably not a true white but tinged with buff or beige. Rubble masonry of extremely poor quality is now exposed in small areas here and there, and along much of the east side. The north-east corner has collapsed, though it was propped in short sections by sloped buttresses. The wall from it to the east end of the north hall (that of 1778) was doubled in thickness by the addition of a continuous sloped buttress, which has slipped apart from the original wall, and roots have widened the gap. There is a bad crack in the west curtain, zigzagging from near the top to the ground, at a distance of some six inches to one foot from the corner of the north-west bastion, which may therefore be assumed to be bonded in. There is also a bad crack in the north side of the north-west bastion, slanting from the middle downwards to the west; the whole side must therefore be of one build. The apex of the south-west bastion has fallen off at the foot.

The height of the walls is about eighteen feet in the neighbourhood of the south-west bastion, which probably rose higher above the original
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ground level than any other part of the fort. This measurement includes the parapet, which is seldom less than three feet six inches high and approaches four feet here and there. The north curtain is twenty-three feet high at the north-west room (Fig. 24.13) and steps up nearly three feet to meet the hall of 1778 (12). The parapet beside the curtain rises less than two feet above the roof of the hall, and so matches another parapet towards the courtyard. Three rectangular windows in the hall curtain match those on the courtyard side (Pl. 71), and there is another such in the north-west room (13). One embrasure on the north-west bastion (the one which faces south) is blocked to nearly half its height by carefully inserted masonry, except for a gap left on the east side, three and a half inches wide, presumably for small-arm fire. Original slits in other walls measure a foot high externally, and about one and a half inches more on the inner side; the internal width is a foot, the external varies about two and a half and three inches in each individual slit. A sentry box on the south-west bastion is five feet high in the vertical portion (from the ground to a rebate just above the doorway), while the sloping portion must have added another four feet, or more if there were a finial (Pl. 69a). A few rectangular drainage-holes pierce the parapet at rampart level around the west and east ends of the fort.
The only entrance was by the flight of steps from the south (Pl. 69b). At the foot of the straight steps are scanty remains of a curved extension, built of yellow bricks, whereas the straight flight, with its parapets, consists of rubble up to the landing outside the gateway. The landing (Pl. 69a) was enclosed by a parapet of brick, which contains two lancet openings on the eastward face, and seems to have had about twice that number on the longer westward face, now broken at either end next to the smooth-plastered surfaces of lancet sides. The northward returns of the parapet are both solid. The parapet, from the foot of the stairs to its junction with the south curtain, was tarred on top and on the sides, but the openings were plastered white.
The entire entrance is built of brick. The outer gateway (Fig. 22; Pls 69b, 70), an arch which rises seven feet above the present ground level, is enframed in a rectangular surround, from which rose a pediment. The whole façade was covered with tar, at any rate in the final period. The tar overlies white plaster, which in turn overlies red plaster; except perhaps in the spandrels, where no red is visible below the white, it is conceivable that the white and red are remains of two older schemes. The intrados is tarred. The inner face of the arch and the entrance passage are plastered a pale beige, which probably resulted from mixing lime with lateritic sand; at one place, flaking has exposed 268
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the edges of at least a dozen layers. On the inner side of the doorway were iron hinges for double doors, and a scrap of iron on the inner side of the keystone may be the remains of a bolt socket. At the back of the double doors a beam could be put across to strengthen the doors. The beam socket on the west, now slightly damaged, was fairly regular in shape, twelve inches high at the centre of the front and ten at the sides and back, by five to six inches wide. On the east side the beam used to be slid along a groove which deepens towards the south, where the beam dropped into a socket. The slide is two feet six inches long, and seven inches high, beneath two rebates effected by setting back the overlying courses of brick. The socket at the end is eight inches wide. It is stepped two bricks down from the slide, and then descends vertically three more bricks at the front, but only two at the back; the total height at the front is thirteen inches. It would therefore seem that the beam-end which fitted into this socket was cut two or three inches narrower at back than front, while the other end was trimmed to allow sideways movement above but to make a tight fit at the bottom. The groove and socket are black, without a trace of plaster, and may have been tarred from the start. There are no other remains of tar except a few stains on the east wall and many at the foot of the west wall. A segmental vault, seven inches higher than the bottom of the keystone, covers the passage inward from the gateway, to a distance of three feet three inches, where an inner archway begins. Its clearance is four inches lower. On its east pier a segmental arch covers a seat-like niche, two feet wide, ten inches deep, and at present two feet ten inches high at the back and three feet four inches at the front, where apparently a number of bricks have fallen away. The intrados of the inner arch extends a further one foot eleven inches northward from the niche till it meets the wall of the court, in which there are hinges for a second double door. Several thick planks, which had obviously been parts of doors, were found lying or standing in the passage, and probably belonged to both the inner and the outer doors; two may be seen on the landing in P1. 69a. The court is lined with almost complete buildings of two storeys on the west and north, while on the east there are ruins of a two-storeyed building which has now fallen well below the first-floor level. On the south side the court met the rampart, which is twelve feet high, including an inner parapet three feet six inches high. A row of rectangular holes at the foot of the parapet drained into the court by means of wooden spouts. Immediately west of the entrance, as a note on the plan of 1791 states, was the powder magazine; an arched doorway opens into the room, which is five feet four inches wide and constructed in the thickness of the wall. The barrel-vault of brick rises from the upright brick wall in the east and an upright base of rubble on the west, leaving a clearance of about seven feet at the centre; the whole interior was plastered pale beige. A door was fitted externally on two iron hinges at the east side, to which correspond two upright rings on the west, into which bolts could be slid. There was also provision for an inner fastening, in slots left in the vertical brickwork on
either side of the archway. These slots are three inches wide, but otherwise differ in every respect. The one in the east wall begins at fifteen inches and ends eighteen inches behind the face of the doorway, and runs from two feet four inches to three feet two inches above the brick sill of the doorway, keeping a fairly uniform depth of some four inches. The other side of the doorway is formed by a brick pier, twenty inches wide. It contains a slot from thirteen to eighteen inches inwards, and from two feet eleven inches to three feet eleven inches above the sill, but the depth is fairly uniform only in the lower eight inches below a backward-sloping top. The slots must have been intended to hold a board less than three inches thick and some eight inches high, placed at a slant across the archway; one end was first inserted into the east wall, and the other was then dropped into the west pier. No doubt this board formed the centre of a second barrier, perhaps of some material which allowed the air to penetrate; it might then have been used to dry the powder on fine days, when the solid outer door could be left open.

A brick stair rose to the south rampart at either end of the court, against the face of the two-storeyed buildings. The west end presents a symmetrical facade, with a central doorway flanked by a window on either side, but the southern window is partially covered by the middle steps of the stair. Here a tree has grown through the stair, the rest of which is virtually complete except for the loss of its parapet. The lower half of the stair is built on a platform, the upper over an arched niche. At the east end of the court the design was more practical, and may be later. Here similar units were unsymmetrically employed, the two windows being placed side by side, while the doorway adjoined the rampart and was approached through an open archway under the stairhead. The foot of this eastern stair was set farther to the north than its western counterpart; the steps have all fallen, but their outline is recorded by an area of bare masonry which zigzags up the otherwise plastered facade behind. The lower steps were built on a platform, the south end of which likewise is placed farther north than its western counterpart, and stands vertical, to form the side of the open archway. The other side of the arch rested on a pier of brick, applied against the rampart; it is preserved up to the spring. The doorway behind this arch is still complete, though partly buried in fallen stones. The platform leaves four inches of wall exposed north of the rebate for the archway, and here were the hinges of its door; an upright ring on the south side of the doorway contained the bolt.

There seems to have been a brick arch covering the head of the eastern stair, because pieces of vaulting are lying on the rampart between the stairhead and just above the entrance, and because a brick pier stands on the inner parapet immediately east of the stairhead. A broken wall adjoining it to the east, higher than the normal parapet, represents the end of the two-storeyed building (Fig. 24.6); the masonry incorporates fragments of European roof-tiles behind the
plaster of the wall face. (A specimen, which had fallen on the rampart, was taken to the National Museum.)

The north side of the court (Pl. 7') was two or three feet higher than the west side. Five doorways and three windows alternate along the ground floor, and there are three large windows above. Between the hall (i 2) and the east side of the court there is a short stretch of probably older wall (the exterior of I i) which slopes backward, the walls elsewhere being all vertical, though along the north rooms the upper part is rebated. The floor level on the court facade is marked, just as it is along the exterior of the fort, by a course of bricks which project about two inches from the upper part of the wall, but only one inch from the lower part. On all three sides of the court, the windows and doors on the ground floor are coigned and arched in brick. The fa~ades were plastered white except for a tarred dado; the rebates of all windows and doors on the ground floor were also tarred, as were the sills of the windows, but the intrados, in doors and windows alike, was plastered white. The windows on the upper floor were rectangular, with wooden lintels set on brick piers, and wooden frames; the sills must have been wooden too, but they have all perished. The bricks here vary considerably in colour, but most are pale yellow; some are brownish or reddish. In the entrance, however, and in the supports of the eastern stair, almost all bricks seem to have been pale yellow, and so are those at the foot of the external steps.

At the north-east corner of the court is the rectangular shaft to a cistern. The shaft is built of yellow brick, and is two feet square at the lip; it retains roughly that size down to the vault of the cistern, four feet below the lip. The floor of the cistern is now covered in earth, four feet six inches below the top of the vault. The exterior of the shaft stands nearly two feet higher than the surrounding earth and is plastered white, above a dado of tar which reaches several inches higher than that on the adjoining walls. An irregularity at the north-east corner suggests that the waterpipe entered at that point. Rainwater seems to have been conducted in two, if not three, pipes from the roofs of the west and of the north and east rooms. The pipes rested on iron brackets, of which three are still preserved on the north side of the court at various levels; they are flat with an upturned end, and project more than a foot. The most westerly is half-way between the north-west corner of the court and the nearest window of the upper floor, a couple of inches above the projecting course of bricks and about four inches below the level of the window sill. The next bracket is between the west and the middle window and about twelve inches below the sill level. The third bracket, at the east end of the north room, is level with the projecting course of bricks, and therefore must have held a pipe either from the roof immediately above or from the roof over the eastern rooms - the height of which is unknown. The room at the west end of the court on the ground floor was tarred all round to its entire height of about seven feet. Both the windows were guarded by thick iron bars, embedded vertically (Pl. 71). A pier of brick stands against the inner side of the wall beside the south jamb of the door and was presumably added when the

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conducted in two, if not three, pipes from the roofs of the west and of the north and east rooms.
room was first partitioned (before 1750); the tar turns out from the wall towards the pier, which is now leaning so far inwards as to have caused the tar to break away. There is no gap in the tar on the other walls to indicate where the far end of the partition came. There is no such gap in any wall of the upper room, which was plastered white above a tar dado, two feet two inches high. Two windows opened on to the court, and one to the west curtain, while two doorways lead to the southwest bastion and to the northwest room (i 3). The height of the upper room was ten feet three inches between the two sets of beam holes, and the wall continued roughly fifteen inches higher. The levels of the beam holes show that there was a flat roof with a pronounced slope from west to east, and probably a slight slope from south to north.

The rooms on the ground floor on the north-west and north were approximately equal in height to the west room. The room at the northwest is entered through a passage, which was covered on the upper floor by the end of the north room. The upper north-west room was the same height as the upper west room. There are signs of alterations to its two outer doors. That on the west was narrowed by building a brick pier against the north jamb, reducing the width from about four feet three inches to about three feet three inches. The lower part of the north doorway is filled with rubble, plastered on either face; probably the blocking was applied to the whole opening, which faced the direction from which storms come; it is possible, however, that the upper part may have been converted into a window. Other doorways communicated with the west room.

The ruins at the east end of the court contain little of interest. A doorway, carefully blocked some time after 1791, had communicated between the slave-prison (i i) and the soldiers' lodgings (6), and is unlike any other, in that weight was taken off the lintel by a segmental relieving arch below the round arch; both consist of yellow brick, as can be seen from the north alone, for the wall is thickly plastered on the south side. The two arched windows at the east end of the court retain fragments of iron bars, like those at the west end. Another vaulted room, resembling the powder magazine, is built in the thickness of the south curtain just east of the entrance under the stairs; it is partly choked with rubbish, so that only one hinge is visible just outside the doorway.

Fragments of several roof-tiles, made of local clay, were found lying below the west curtain; these are preserved in the National Museum. Two cannon lie half-buried in the same area; the maximum diameter of each is about eleven inches, the one measures six feet four inches overall, with an internal muzzle diameter of three and three-quarter inches, and the other is seven feet.
long. These guns must have been antiquated by 1804, when the fort was very badly equipped with artillery (according to an official report, which a newly appointed Dutch Governor concealed behind the false lining of a trunk, only to have it discovered when the Royal Navy intercepted his ship). The requisite addition to the armament took the form of four carronades, cast in Scotland during the Napoleonic wars, but presumably not delivered till peace returned. When, after another half-century, the British abandoned the fort, they demilitarized it by throwing the carronades over the walls, but left two of the iron carriages standing at the southern embrasures of the south-west bastion, and another near the south-east corner, below which a fourth lay broken. Both the carronades belonging to the former pair have been found, but only one on the east. Two of the carronades now stand on their carriages outside the National Museum.

1 The plan of about 1786 belongs to Fisscher's set, which is habitually inaccurate in detail, and some of the discrepancies when compared with the plan of 1791, may be due to carelessness. But he marked two items omitted in 1791, a room upon the east battery (half-way along, beside the parapet) and a service yard at the foot of that battery. The room immediately east of the hall, a bedroom in 1791, is drawn as reaching to the kitchen. The uses to which some rooms were put had changed by 1791.

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SHAMA: FORT ST SEBASTIAN
(Pls 72-6, 77b)

THE original building at Shama, founded by the Portuguese about 1560, was restored and altered by the Dutch about 1638, but was almost completely destroyed in 1664;1 the structure seems then to have been of an impermanent character, and was enclosed within an earth bank and palisade. Soon afterwards the Dutch began the present fort on the same site. Its chief use, owing to the position at the mouth of the great River Pra, was for obtaining supplies of timber and firewood; in other respects trade was so inconsiderable that the Dutch would have abandoned the fort, according to Barbot's information of 1682. He had drawn it in 1679 from three miles out at sea, representing it as a low bastioned enclosure, apparently narrow towards the sea, with a couple of single-storeyed gabled buildings within (stretching inland); the outer wall did not yet exist. The perimeter, he says, was roughly equal to that of Butre fort, though the length was greater; the lodgings within were 'pretty convenient', and the appearance from the sea is described as 'like a white house'; there were only eight guns. About a dozen years later, there are said to have been twelve small cannon, and the occupants comprised the commander, two assistants and twelve soldiers. Although no events are recorded during two centuries of Dutch occupation, there must have been constant need for vigilance because of the notorious turbulence and the political isolation of the townspeople (a patrilineal community, which had thrust in amid matrilineal tribes). It is therefore not surprising that the fortifications were much stronger towards the land than seawards, as was noted in 1804, and that the garrison of the time was exceptionally well supplied with artillery and ammunition. In 1872, the fort was ceded to the British, in fairly good
condition; by 1950 it had begun to decay and was choked with unseemly additions, but a general restoration, completed in 1957, has put it back almost into its Dutch form.

The fort (Pl. 73a) stands upon a bank of gravelly conglomerate, between the beach on the south and east and a deeply eroded stream-

EARLY FORTS

bed on the west. The inner enclosure is almost rectangular (the longer axis pointing towards the sea) with bastions at two corners and smaller round towers on the others; the entrance faces the sea (south-east) and leads into a courtyard which is lined with two storeys of rooms on the north-east and north-west, and a single storey of tall vaulted rooms on the south-west, where the roof served as a battery. The platform of the inner enclosure extends outwards to another line of defence, a lower wall which conforms fairly closely, though by no means precisely, with the bends of the inner defences except towards the sea, where it projects to make a spur; the end is roofed over, and formed the guardroom (Fig. 27.2), and outside the gateway (i) a long flight of rounded steps descends to the beach. A minor gateway (3) on the south-east side opens on to a shelving mass of rock, which was commanded by one or two little gun-ports in the outer curtain. Elsewhere, although each corner of the outer wall is shaped like a bastion (P1. 77b), slits for smallarms provided the sole means of defence (P1. 74b).2 Erosion outside the spur has been countered, throughout at least the past two hundred years, by means of sloping aprons, intended to divert rainwater from the foot of the wall; eventually a whole series of such shelves extended far out, but their surfaces could not be kept waterproof, and long stretches of wall became undermined.3

Accurate dating is impossible, for lack of evidence in the earlier period. Barbot’s view of 1679 was drawn from too great a distance to be trustworthy over details. An engraving published in 1709 gives an almost certainly reliable view of the outer and inner defences, seen from the beach, but full-on, so that nothing beyond the nearest corners is represented (P1. 72a). The oldest plan (Fig. 26) may be later than 1750, and differs only in a few minor respects from the present conditions. Another, a careless work of about 1786, is accompanied by a view (P1. 72b), also drawn from the beach, while the most detailed plan is dated i79i (Fig. 27).

Examination of the structure has confirmed the accuracy of both the Dutch views - even where their evidence disagrees, owing to an alteration. The plans can be checked by a modern survey (Fig. 28).

The inner enclosure may be assumed to date, in the main, from the rebuilding of i665. Only the bastion facing the sea is known to be later (and its parapet seems still later) : in 1709 there was a round tower here. Perhaps the bastion towards the land may also have replaced a tower, but the shelter on the apex, with its tall conical roof (Fig. 27.15; P1. 74a), should be earlier than 1700. Both the bastions
are shown on the plan of 1750. The existing round tower (Fig. 27.8) on the other seaward corner (where a bastion apparently stood in 1679) was originally 276

\[ o \quad 10 \quad 30 \quad FT \]

\[ o \quad 5 \quad 10 \quad M. \]

FIG. 27 Shama: Fort St Sebastian. Outer gate
Guardroom South gate
Inner gate; bell above Bedroom, over granary entered under stair Hall, over slave-prison and corporal’s lodging Room on the battery Tower over powder magazine
Upper plan, Feb. ‘79'
9 Flag pole
10 Kitchen i x Cistern
12 Room over armourer’s lodging
13 Battery over storerooms 14 Another room built on
15 Tiny room on bastion
4.

EARLY FORTS
supplied on both of its two floors with gun-ports, coigned and roundarched with Dutch bricks, and obviously integral parts of the structure. The gunners below would have had to fire blind, raising the cannon so that the shot cleared the outer wall - an indication that the tower was built earlier than that wall. Between 1709 and 1786 these lower ports were blocked, and the room converted into the powder magazine. On the upper floor the original structure contained three gun-ports, interspersed with small-arm slits, but between 1709 and 1786 the old ports were blocked and larger arched openings inserted. These (which were afterwards re-shaped into normal windows) have now been closed and the original ports re-opened (P1. 75b). The top and bottom of the parapet are emphasized by cornices of overlapping courses of brick, which continue above a room at the back (P1. 75a); they do not appear on the views of 1709 and 1786, but the room itself is demarcated (7) on the plan of 1791.

The gateway (4) to the inner enclosure is still ornamented, on both faces, with mouldings in Dutch brickwork (Pls 75b, 76b), compatible with a date around 1665; only a Shouldered bell-gable above has perished. The two-storeyed rooms around the courtyard have been slightly altered to suit the various purposes served during nearly three centuries of use. The roofs were relaid not long ago, slightly above the old level; joist-holes prove that they sloped gently. Many round-arched windows are preserved in the back wall (the original north-east curtain), though often partially or completely blocked; a date inscribed on one piece of blocking was hesitantly read in 1951 as 1682. High above the doorways of the slave-prison (6), round holes, about two feet in diameter, ensure ventilation and admit a subdued light, under cover of the eaves. Between 1750 and 1786, two early stairs were demolished and replaced by the existing stair in front of the rooms (P1. 76a); the brick parapet is lightened by lancet openings. A continuation of the parapet
(Pl. 76b) runs above the inner face of the entrance, where an earlier staircase had ascended.

The outer wall must, on Barbot's evidence, have been built after 1682, but seems to have been begun within the next few years. The main gateway (Fig. 27.1) - now indented at the top to carry a bell (Pl. 73a) - is unornamented except for a little triangle over the centre of the arch; the date 1690 is incised, rather clumsily, on the south-west jamb. Nor can the elaborate design of the side gateway (Fig. 27.3; Pl. 73b) be any later. Upon its rounded and shouldered gable stand three square pedestals which support elongated pyramids. A pair of plain archways, which may well be contemporary, span the gap between the inner and outer walls (Pl. 74b), on either side of the fort, 278

GROUND FLOOR
FIRST FLOOR
o 1o 60 FT

FIG. 28 Shama: Fort St Sebastian. Upper and ground plans, 1956

EARLY FORTS
so as to close off the space towards the back; it formed, no doubt, an internal service yard. The kitchen, however, stood in the public area; it is still preserved, filling the east corner of the outer wall (Fig. 27.10). Outside the north corner lay an external service yard, known only from the plan and view of 1786, which represent it as containing a small gabled building and a tower; the site has been so much eroded that no traces remain.

1 The original fort was built by the Portuguese between 1558, when they brought the town of Shama under their control, and 1564; their motive was apparently to stop English ships from continuing the recent practice of trading there. Full accounts of those voyages have been preserved (by Hakluyt), and leave no conceivable basis for the current supposition that a fort then existed at Shama. Moreover, one of the English sailors, Martin Frobisher, who was captured by the Portuguese in 1555 and kept prisoner at Elmina for nine months, stated seven years later, under official interrogation, that 'the king of Portugal hath no other castle, fort or house of traffic' between Cape Verde and Nigeria, than at Axim and Elmina. The printed text of his Declaration follows the contemporary transcript (in the British Museum, Cotton MS. Nero B.I., f.88b) in recording that he said this 'assuredly', but in the manuscript the word is so written, with a long 's', as to be easily mistaken for *absurdly*; hence, apparently, an erroneous comment by the latest editor (J. W. Blake, Europeans in West Africa, 11, p. 358 n. 2; cf. I, p. 56; accounts of the English voyages, II, pp. 332, 334, 358, 425-6). The fort is first marked on a map by G. di Castaldi or Gastaldi, II disegno della geografia moderna dell' Africa (Venice, 1564).

A Portuguese chart of 1630 represents the fort (on the wrong bank of the River Pra) as composed, it would seem, of a bastion, two single-storeyed buildings with pitched roofs, and a two-storeyed tower on the inland side. In x637, when the
Dutch took possession, they are said to have found only the ruins of 'a stone redoubt with a lodge', and to have restored the fort, building a rectangular battery 'in the middle'. The builders, however, seem to have relied on mud instead of mortar; in 1646 'a great part of the south wall' collapsed and could not be restored till the rains ceased, when a 'parcel of lime' was obtained 'for the making of the fort's house' - presumably to whitewash the face. Some months earlier the armament had consisted only of four little iron cannon (two-pounders or less); the occupants were listed as the commander and his assistant, a corporal and three soldiers. Although a total of nine muskets (including two that were unserviceable) hints that the establishment was below strength, the fort must have been extremely small. It stood within 'a strong bank' crowned, no doubt, with a palisade. That the structure remained unsound may be inferred from the statement that in 1664, when captured by the English, the fort was 'almost laid low with the ground'; it was still enclosed with palisades. The Dutch regained possession within a year, and the rebuilding which they put in hand need not have kept to the former plan.

2 The view of 1709 shows a gun-port near the south corner, but possibly through a mistake of the engraver's; the plans of 1750 and 1786 mark only small-arm slits, that of 1791 ignores all openings in the outer wall.

3 Concrete underpinning has now stopped the erosion. During the preliminary stages of this work, the skeletons of a man, a woman and a child were discovered under the foundations of the wall, near the east corner.

4 The side gateway is ignored on the plan ascribed to 1750, perhaps through a copyist's error, but it may conceivably have been blocked at the time.

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PART FIVE
FORTS OF ABOUT 1700

AKWIDA FORT DOROTHEA
(P1. 77a)

Political or military, rather than commercial, objectives must have induced the Brandenburger Company to build their tiny fort at Akwida; the site offered unique advantages for their aspiration to dominate a long stretch of coastline by means of a chain of strongholds. Here, at the mouth of a wide but sheltered bay, they obtained possession of an island, comprising not much more than an acre of rock and soil; it was connected with the mainland by a sand-bar, which formed a convenient entrance, yet was impregnable to a hostile tribe. With these natural safeguards, a weak garrison and the minimum of fortifications seemed adequate, and normally were so, but when rival Companies helped the tribesmen by sending their own well-armed forces, the Brandenburgers could not hold out.

The fort stands in the centre of the island, where in April 1684 a triangular piece of ground was enclosed with a stone-covered bank, faced with a palisade. On June 2nd von Schnitter, the chief engineer of the Brandenburgers, made a pair of
schematic drawings, one (Fig. 29) showing this provisional fortification, which had been completed three days before, the other his project for replacement in stone, with vaults inside the half-bastions at the corners. Of the proposed three inner buildings, however, only the largest actually seems to have been constructed, and that with a pair of additions incompatible with von Schnitter's project; although this building resembled a house, a bastion was attached to either end, in accordance with a decision taken in 1685, and the result in each case was to encroach on the site where he had intended to place a corner of the enclosure. In 1686 the occupants were listed as one officer, a sergeant, a lance corporal and four soldiers; there were six cannon. Both the bastions seem to have been almost ready to have the cannon mounted upon them when the Dutch captured the fort in 1687. A treaty of the following year restored the fort to the Brandenburgers, in spite of which they did not actually regain it till very late in 1690.

FORTS OF ABOUT 1700
A couple of years later, the personnel consisted of one junior trading officer, a corporal, an armurer and a dozen common soldiers. New guns then arrived from Germany, increasing the armament to two sixpounders, twelve smaller cannon and twelve swivellers; some, no doubt, were placed opposite the sand-bar and at points along the shore. A programme of reconstruction also was completed in 1693, and is said to have 'very considerably strengthened and improved' the fort. The results should be visible on an engraving published in 1709 (Pl. 77a), because no work in the meantime is recorded. The original palisade and bank had been destroyed and not replaced, but the defensive scheme of 1685 still obtained. The two little bastions overlapped the corners of the north side, which faced the bay; they were reported (probably in 1699) to have carried twenty small guns. The intervening building, which looked like a flat-roofed house, contained 'a sufficient number of rooms and conveniences' - for such purposes, no doubt, as storage - but 'slightly built and somewhat crowded together' As an aid to defence, the roof was surrounded by musketry slits, and the board shutters on the windows would have been proof against anything less than artillery fire. The function of the cupola on the roof was, no doubt, to keep the staircase dry, but may also have been useful as a sentry-shelter.

FIG. 19 Akwida: Fort Dorothea. Palisade, June r684

FIG. 30 Akwida: Fort Dorothea. Upper plan, i79o-r
In 1711 the English and Dutch combined to capture the fort, which was again relinquished to the Brandenburgers soon after. An officer was sent in February 1712 to direct the necessary rebuilding, with instructions to put the slaves on to collecting oyster- and other shells to burn into lime. A few days after his arrival, he wrote to Princetown asking for wood to make a palisade, but that, no doubt, was intended merely to secure his camp. Rubbish still choked the fort some weeks later.

In June, a long spell of wet weather caused the collapse of 'a battery' presumably one of the bastions.

By a treaty ratified in 1718 the fort nominally became Dutch property, but owing to local opposition the recall of the Brandenburger garrison left it empty; after six years, during which it must have been robbed of everything portable, the Dutch found it 'little better than a heap of rubbish' Not till 1732 did they undertake a half-hearted restoration 'to make it proper for a white man to live and carry on trade there.' The phrase might imply that the accommodation was reduced, and, in fact, plans ascribed to 1786 and 1791 (Fig. 30) show that a large proportion of the interior had been converted into a court. Otherwise these plans and the existing remains correspond in most respects with the engraving of 1709. The retention of the old design, which goes back to 1693, is the more surprising considering that a Brandenburger restoration had taken place in the meantime. The explanation may be found in a Danish statement, datable to approximately 1692, that the 'lodge' (so the fort is termed) was 'well-built, as was always the case with structures built by the Brandenburgers, whether for trade or other purposes.' The present condition of the fort bears out that statement. Upkeep had been neglected even before 1804, and the walls are quite thin, but most of them are still (1957) standing to the full height, though in an advanced state of decay, after a century and a half of unroofed exposure to saltladen winds and an extremely heavy rainfall. The material is almost exclusively rubble, of stone collected on the island, though the parapet must be brick; most surfaces retain the old plaster coating. The east bastion is represented only by a mass of vegetation, but almost every other feature remains visible, though edges of the rectangular doorways and windows have broken away, in some cases causing wide breaches.

The plans of 1786 and 1791 show that two important additions had been made since 1709, but these may be attributed more plausibly to the Brandenburgers in
1712 than to the Dutch in 1732. The solid west bastion had been prolonged by a rectangular extension which ends flush with the south wall of the residential building; the platform throughout stood at the same level (roughly that of the upper floor) and was bordered by a low parapet with very narrow embrasures. On the north side a wall (now in ruin) had been added between the bastions, parallel with the old facade, from which it was separated by a narrow open passage except at the centre, where a vaulted porch came forward; here some steps (curved in 1786, straight in 1791) led down to an outer yard, almost equivalent to a spur. Another change since 1709 was almost certainly Dutch work, because it implies an expectation of peace. The two-storeyed building no longer

AKWIDA: FORT DOROTHEA
retains the parapet with musketry slits, but bears one of the usual civilian type, in which lancet openings occupy almost as much space as the intervening solid bars; only on the north side is any remnant preserved, but the whole of the flat roof must surely have been lined in a uniform manner.
The plan of 1791 bears a note: 'To SSW there is a small yard beside the fort, though not represented here because it is enclosed at present only with a mud wall.'
The latest account, by de Marree, applies to 1802-4.
Fort Dorothea is of the oddest architecture imaginable. On the land side it has two bastions, on each of which stand four small cannon, but on the seaward side the ordnance defends it in a totally different way, from a single flank, and so the side gets no defence at all. That, you must understand, is how the fort used to be in its heyday, but of late it cannot be described as anything more than a shored-up ruin. Picture to yourself a house of two storeys, consisting of a hall (if you can call it such) and two rooms, while the lower storey serves for storeroom and lodging for the garrison, a place for keeping slaves, a powder magazine etc., and the whole is altogether so small and wretched that one cannot conceive the like of it.
A few years after that was written, the Dutch abandoned Akwida.

COMMENDA: THE ENGLISH FORT
(Pls 78, 79)
PLAIN stretches for miles on either side of Commenda, where a small stream enters the sea; near the west bank stand the extensive ruins of the English fort, and opposite, 'within musketshot', the dismal relics of a Dutch fort, Vredenburg. The English chose the better site, an eroded bank, raised above a shelving beach in front and a dry expanse of flat ground behind; the Dutch built on a sandspit, between the sea and a swamp.
The first English trading-post, founded in 1663, was abandoned because of local hostility, which forbade the construction of an enclosing wall; it had become a ruin by 1686, when the English began 'a new house' Vredenburg was founded two years later. In 1704 each fort had four bastions, but the English was potentially more formidable owing to 'a turret fit to be mounted with guns' which could aim
at Vredenburg; whether this 'turret' formed the end of a spur, or projected upwards from the fort proper, is by no means clear.

In 1708, when the fort was in good repair, proposals were sent to London for building a new fortification, which would require a garrison of 'twelve soldiers with approximately a sergeant and gunner, and fifty slaves' (compared with a total of some twenty free occupants about 1692, and seventeen at the time in question, according to a somewhat dubious source). Only an abstract of the letter is preserved, and the condensed version of the opening sentence, describing Commenda as 'a good form to fortify by', would be incomprehensible but for the obvious fact that an outer line of defence has been added, copying the original shape of the fort but on a much larger scale. This device of enclosing one fort within another seems to have been peculiar to the English, who used it also at Sekondi a few years later; they may have been inspired by the example of Cape Coast Castle, where most of the exterior of a previous fort had been retained, one part incorporated in the defences and another projecting inwards into the court. Smith's plan and view of 1727 (P1. 79a) show that the fort, then 'the 288

COMMENDA: THE ENGLISH FORT

largest and strongest of any subordinate to Cape Coast', consisted of an inner and an outer rectangle, each with a bastion at every corner; in

FIG. 3' Commenda: English Fort. Ground plan, April 1756

8 Kitchen (thatched) 13 Slave Hc
9 Barracks (thatched) 14 Base of t
barrack io Carpenter's shop
(thatched) A Fallen
as (thatched) Inner Fort: B This par
I (thatched) xi Store C Ground
ogs, etc 12 Magazine rebuil
le
ower
t already built prepared for ling
the middle of the inner enclosure stood a tower (possibly identifiable with the 'turret' of 1 704). The back of the outer curtain was lined with rooms continuously on all four sides. In 1739 the inner fort was said to 289 K
Cistern Sergeant's Gunner's Smithy Storeroom Stock she Shed for 1

FORTS OF ABOUT 1700

have decayed, and six ports on the outer curtain opposite the Dutch fort lacked guns, 'nor is the battlement [i.e. the platform] in reality deep enough on that side to admit of them' In January 1750 the total number of guns was twenty-three (the largest being a nine-pounder). The fort then held seven free men, together with twenty-eight adult slaves and five children; of the twenty-eight slaves, ten were sawyers who can only have been temporarily stationed there. Probably they were
putting up a wooden barrier where 'a great breach' had opened in the curtain opposite the Dutch fort; both the adjoining bastions also needed rebuilding, though the rest of the fortifications were 'in tolerable repair'. In September of the same year the occupants were engaged in 'rebuilding the decayed and fallen bastions and curtain'. In 1756 (Fig. 31) the same curtain and the bastion at its seaward corner were being rebuilt shorter, so as to place the guns at right angles to the Dutch fort; it was found that clay instead of mortar had been used in the construction of the old walls. The new work involved widening the curtain outwards and re-shaping both bastions with a wider facing of masonry. Comparison with the plan of 1727 shows also some changes in the one-storeyed buildings which backed the outer fortifications; the row on the inland side had been demolished, some rooms had been vaulted (and therefore must have been rebuilt), others were still thatch-roofed. No later alterations seem to be recorded, but at some date after 1756 a viaduct (Pl. 79b) was built between the inner fort and the curtain opposite the Dutch, obviously in order to facilitate defence. This improvement may have been in answer to the Dutch action of re-shaping and strengthening their fort where it faced the English, as recorded in a set of plans and elevations. But the Dutch fort was taken by the English in 1782; handed back in a ruinous condition three years later, though re-occupied, it was never restored, and was finally abandoned not long after 1804. English Commenda too was abandoned, after the execution of planned demolitions, in or before 1816; a report of 1821 remarks upon the extraordinary number of cannon, many of which had been brought from the Dutch fort but lay unmounted.

The ruins have since been diminished by quarrying to obtain building material. Only the east side of the outer defences, rebuilt in 1756, remains virtually intact (though a house stands on the seaward bastion), even retaining an inward parapet of brick, with lancet openings. Otherwise the outer curtains have been demolished, and the bastions are dilapidated; the vaults remain of some rooms behind. The outlines of the inner fort can still be seen, though blurred. Like the outer fort, it was mainly built of stone, laid in excellent mortar, but there are many obvious repairs (including patches of coigning to the bastions) in

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COMMENDA: THE ENGLISH FORT
locally baked brick; these should probably be dated between 1708 and 1750, and unquestionably the whole of the seaward curtain was rebuilt in similar bricks after 1708, because it consists mainly of three large archways, separated by piers containing lunettes, and could not have been defensible (Pl. 78).

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DIXCOVE FORT
(Pls 80-86)
NORTH European station resisted as many sieges as the English fort at Dixcove. Its architectural transformations are remarkable, and exceptionally well documented, while a thorough restoration, undertaken in 1954, has given opportunity to examine almost every portion of the structure. This
report, therefore, can be more detailed than is feasible in the case of any other building.

I HISTORY

For two hundred years before a fort was built, Europeans had occasionally traded from shipboard off the large and exceptionally sheltered bay they called Dick's or Dickie's Cove - the name was not abbreviated till the eighteenth century. The cove, with its calm waters and sandy beach, is an ideal landing-place for canoes or small boats, but no ship of appreciable draught could enter it, and the best anchorage lay a mile and a half offshore (to the south-south-east at fourteen fathoms). This inconvenience was a trifle compared with the difficulties of most callingplaces, and is insufficient to explain why no trading-post was established until nearly half a century after the breaking of the Portuguese monopoly, especially considering that a path led straight to Dixcove from the goldfields of the interior, the nearest of which lay within a couple of days' walk. But there was a political drawback. Dixcove town consists of two states, because the ancestors of the population had migrated in two separate streams; each state was governed by its own tribal council and paramount Chief, and both were independent of the Ahanta tribe, the occupants of the country immediately inland and of the coastline for many miles to either side. When the state of Greater or Upper Dixcove leased the site for a fort to the Royal African Company of London, it must have had another motive besides that of profiting from increased trade; no fort could avoid some measure of responsibility to protect its African neighbours against attack by another tribe, and

DIXCOVE FORT

the opportunity of getting English support must have been especially welcome in view of the overwhelming numerical superiority of the Ahantas. The total population of the two Dixcove states, including outlying villages, was estimated in 1737 at only two thousand, and in 1810 at three thousand. The English began 'settling' Dixcove towards the end of 1684, probably by establishing a trading-post in a rented hut. The Brandenburger Company also is recorded to have set up its flag there in similar fashion, at some uncertain date, which can only have been either between 1683 and 1687 or between 1690 and 1692. In 1692 when the English started to build their fort, they could not have expected a quiet tenure. The Dutch and the Brandenburgers were contending for that stretch of coast, with their respective tribal allies, and neither could look with favour upon the intrusion of a third Company, however willing each may have been to co-operate temporarily with the English against the other. Apparently for that reason, the Brandenburgers did not uphold their claim to Dixcove. Their designs on the coast eastward of Dixcove had been terminated five years earlier with the destruction of their fort at Takoradi by the Ahantas, at Dutch instigation, just after a combined Dutch and Ahanta force had captured the nearest fort to the west, Akwida, which the Brandenburgers regained in 1690. The prospect that the Ahantas would be embroiled also with the English must therefore have been welcome. In fact, since one of the Dutch forts in Ahanta territory, Butre, was
situated only three miles east of Dixcove, and the tribal capital barely one mile
away, the history of the English fort is punctuated by wars with the Ahanta.
Information on the early period is obtainable mainly from reports sent to the
Royal African Company in London, and there copied in summarized form into
ledgers; only the abstracts are preserved, and their information is sometimes
difficult to interpret as well as sparse.
Immediately prior to April 1692 a solitary Englishman, Charles Hinson, had been
stationed at Dixcove, and presumably completed the negotiations with the Chief
and tribal council. The abstract of a letter dated April 6th includes the first
mention of the project: 'Are building a fort at Dick's Cove with consent of the
natives. May prove a good place for corn and at wooding and watering.' A year
later, one officer and only six subordinates were stationed there. Extra labourers
may have been hired, but they would, of course, have had no experience of
building in any materials except mud, sticks and thatch. At that date, though, the
technique in English forts was not vastly superior. Walls were built of rubble
thickly laid in mud, and coated with lime-plaster to keep out moisture; with a
watertight roof they might last many 293

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years unless exposed to heavy and prolonged rain, which was liable to cause
immediate collapse. One part of Dixcove Fort, built in this manner, endured to
1954.

In March 1694, when the captain of an English slaving-ship visited Dixcove, he
found the commander 'building a small fort on a great flat rock about half a mile
east of the town. It was not half finished then; a few small guns planted upon the
rock under the fort, open, being all his defence.' A couple of months later, much
of what had been built seems to have collapsed after a succession of very heavy
storms, which damaged all the English forts. The abstract of another letter, dated
August 2nd, contains the cryptic remark that the fort 'is threatened which they
strengthen', whether against natural or human aggression is not clear; since,
however, another paragraph gave the assurance that Dixcove 'goes on well',
danger of war is the more likely- A letter of November 24th conveyed the news
that the fort 'cannot be repaired without a supply of deals', implying that the roof-
timbers had decayed.

A rapid succession of commanders may have caused further delay, especially as
some were removed for indolence or incompetence. A letter of August 8th, 1696,
which announced the appointment of yet another, bore a postscript which is
summarized as 'will endeavour the relief of Dixcove' The first siege by the Ahanta
had begun. On December 16th Dixcove was still 'a seat of war and fatal to the
factory' (meaning that trade had ceased), but the Ahanta must have abandoned the
siege a month later, after suffering a catastrophic defeat on another of their
frontiers. On December 18th, 1697, lime 'to finish' Dixcove, i.e. to coat the wall
faces, was ordered from Winneba; in April 1698 the building was described as
'near finished', though on November 1st of that year there was still need of
'materials to finish' it.
It seems that a dozen years of tranquillity followed the completion of the fort. Prospects of trade with the interior brightened in 1706, when presents were exchanged with the King of Ashanti, and occasionally individual traders from that country arrived, but they found a better stock of goods in the Dutch forts. Exploitation of timber - Dixcove was the only English fort in a well forested area - began on a small scale, but could not be fully developed merely with hired labour. Accordingly a letter from the commander, dated March 31st, 1706, urged the necessity of maintaining a great number of slaves, presumably for cutting and hauling timber, and added that the fort 'ought to have twelve soldiers with a gunner and a doctor, a Second Officer and a writer' In fact, the number of occupants fluctuated between six and thirteen during the years 1693-1713, being increased, one may assume, in times of war. The number of slaves seems to have become adequate by 1710.

DIXCOVE FORT
Two of the earliest writers on Dixcove were so hostile to the Royal African Company that their testimony cannot be accepted without reserve. In the case of the Dutch officer, Bosman, his animus against the English was such that he deliberately misled his readers upon the course of events, but he may have been justified in describing the fort, upon its completion, as 'so inconsiderable and slight that it hardly deserved the name of fort' An English free-trader, in a propaganda work published in 1710, writes of 'a small square fort', armed with six cannon, but his data must have been either obsolete or false, as suited his purpose of discrediting the Company. That the fort had been improved is obvious from an engraving published in Bosman's second edition of 1709 (Pl. 8ia), and from a description included in Barbot's collection of excerpts, and therefore not later than 1711: 'A large and square fort, it is built of stone and lime, has two round flankers, and two square bastions, with twelve guns mounted in very good order, and a suitable basin to contain rain-water.' By the usage of the time the word 'square' could be applied to any rectilinear shape, and there is no reason to suppose that the bastions were even rectangular, still less square. The fort itself, however, was in fact square, apart from a spur, recognizable on the engraving (to the left) by its lower walls; apparently the description that Barbot quoted was written before the addition of the spur.

In 1711 the Brandenburger Company and its African associates, west of Dixcove, were attempting to expand at the cost of both the English and the Dutch (although at the time all three nations were allied in a European war). A letter of October informed London that the fort could not live peacefully unless the Brandenburger 'nest of rogues' were destroyed; in particular, a rebellious faction at Dixcove had been suborned to hinder timber cutting. Soon after, John Couny, a Chief who dominated the Brandenburger region, led an invasion of both Dixcove and Ahanta territory, but was defeated by an army which included soldiers sent by the Dutch from Elmina and by the English from Cape Coast. After re-gathering his forces (to the number of fifteen thousand according to his own boast!), Couny made a second attempt to capture the forts at Dixcove and Butre, but succeeded
only in occupying the towns below them. His attack on Dixcove Fort, around New Year 1712, was repulsed with a loss, by English estimate, of some hundreds of his people, 'and many more had been destroyed, had not the turret within the fort accidentally blown up; twenty of the Company's slaves and several free Negroes were lost by it, and Mr. Timothy Fish, Chief [commander] at Sekondi, being there to take care of the fort, was burnt with the powder, so that he died a few days after.' Obviously the explosion did not occur in the real powder magazine; an emergency

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FIG. 33 Dixcove Fort. South elevation, Feb. 1727
supply was being kept in a central tower (as also was done in 1750) because that was the place most quickly accessible from every part of the defences. The tower in question must have been that shown (under the flag) on the view engraved in 1709 (Pl. 8 I a). Views of other forts by the same draughtsman are known to have been remarkably accurate, and so probably was this one. The parapets of the curtain-walls are drawn with many slits, through which the townspeople must have fired their small-arms against Cowny's men. The number of open gun-ports, seen on the bastions and roundels, suggests that there could have been a total of some twenty cannon, assuming the placing to have been fairly uniform all round the fort.

In February 1727, William Smith made a survey for the Royal African Company. His original plan and elevation have been preserved (Figs 32, 33), but he must have drawn others known only from engravings. A few of the glaring discrepancies between the versions must be due to error, but on the plans the majority arose from representation at different levels, as can still be seen at one place only, the junction of the south roundel with the rooms behind it; here the
original plan corresponds with the existing ground floor, and the engraving with the upper storey. But the reverse is more plausible in the two northern bastions. The scale of the plans also differs; the original exaggerates the overall dimensions of the square inner fort by approximately one-third, the engravings by a mere trifle.

Comparison of Smith's work with the engraving of 1709 reveals three considerable changes. A more imposing watch-tower occupied the site of that destroyed by the explosion. The roundel at the end of the spur had been replaced by the empty outline of a bastion, composed of walls too thin to support cannon; probably the builders meant to fill the interior, as was done shortly after. There was a new parapet on the south curtain of the old square fort, with a row of ports, each of which was occupied by a gun (omitted, for the sake of clarity, on the redrawn Fig. 33, but shown on both the original and the engraved view). Perhaps the whole curtain had been rebuilt, because the lower part now contained three windows, or, according to the engraving, four. Remains of the gun-ports and one or two windows were uncovered some years ago; the latter opened almost within reach of the ground. Such indifference.

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to considerations of military prudence may have been thought excusable because the steep slope outside was commanded by the guns on the flat roof, where, too, the defenders could concentrate with their muskets if the enemy succeeded in coming close. But a low outwork was afterwards added to bar access to the curtain (Fig. 34.6).

Smith utilized his elevation to draw a view from the sea. The engraving represents the slope below the original fort laid out with vegetable beds, and the slaves' village of huts spread along the water's edge, opposite the spur. The caption refers to 'two handsome gardens, belonging to the fort, which supply their table with several sorts of fruits, roots and salads'; the second garden was out of sight, just within the mouth of the cove, as is known from a description of 1737.

In a report of 1737 it is stated that Dixcove had lost its advantageous position for trade with the interior owing to a war between the Ashanti and the Wassaw, and the subsequent migration of the Wassaw; the path through their former territory had not been re-opened. Strictly local resources, however, still gave importance to the fort. A large quantity of limestone had just been discovered six miles away, when a bed in the cove was almost exhausted, and Dixcove was essential as the local source of lime for the repair and upkeep of the English forts. It was also their only source of planks and beams, which were obtained at great expense, because the timber grew seven or eight miles away in rugged country, so that a 'great number of young slaves to hew and bring it down' had to be supplied from elsewhere whenever wood was required in large quantities; the permanent slaves numbered twenty to twenty-two men and fifteen women in 1730-1. Ships also obtained wood and water from Dixcove, in preference to other forts, because the landing-place was nearly always calm. On the other hand, Dixcove was reputed 'the most unwholesome of our forts' owing to its being sheltered from the sea.
wind and separated from the bush by no more than a pistol-shot. Between the fort and the sea lay a small garden and the houses for the Company slaves, who were thereby removed 'out of the way of quarrelling with the natives'; west by north from the fort, too, was 'a very pretty laid-out garden, distant about a musket-shot'. The establishment consisted of two officers, a writer, a sergeant, a gunner, four soldiers and a master Sawyer; the Company paid subsidies to two Chiefs and a linguist (to use the modern term for a Chief's spokesman), and the fort maintained forty-one slaves and three free canoemen. The building was in good repair, though four or five of the gun-carriages had decayed; there were twenty guns. The older part of the fort remained, as in 1727, flanked by three true bastions and one 'round bastion'. The tower, 'raised above' the rest, is stated to have measured twenty-eight feet.

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across, an apparent over-estimate. The end of the spur had been converted into a bastion; 'from the round bastion is carried a wall, which forms one of the spur's of 70 ft, to a bastion capable of eleven guns although at present there is placed but seven, the flanks of which are 14 and the faces 44 ft'. These dimensions indicate that the end of the spur had been thickened outwards when solidified, because the plan of 1727 makes the flanks about six feet and the faces twenty or thirty feet (on the original and the engraving respectively).

In 1750, when the Royal African Company went into liquidation, a great programme of rebuilding had made too much progress to be halted. On January 11th, 1750, an officer of H.M.S. Humber, ordered 'to examine the conditions of the fort', went ashore not more than seven hours before dusk, and the ship sailed that night; the plan he drew (Fig. 34) must have been completed on board. It is naturally sketchy, but only one large feature need be questioned: if the inner of the 'almost demolished bastions' (6) had already been reduced to shapelessness, it might perhaps have been no bastion but the early roundel. However that may be, the fortifications in that area had been so nearly destroyed that the design for the replacements must have been already drawn, and cannot have been greatly modified when translated into stone and mortar, as represented six years later (Fig. 35). In fact, any appreciably different scheme would have impaired the military efficacy of the new spur, which had been completed when the naval officer saw it. It was wider than the predecessor, and therefore spacious enough for the court to be lined with vaulted rooms, the brick facade of which is treated
with a wealth of ornament unparalleled in West Africa (Fig. 37; Pls 85, 86b). The roofs form one continuous battery with the platforms of solid bastions at the outer end, at a height almost equal to that of the fort proper (allowing for the slope of the ground).

The officer in charge of construction, however, took no thought for defensive needs and left the spur without a parapet. Moreover, as the officer from the Humber remarks, the three old bastions (5) had become 'very much out of repair', the tower (3) 'if not immediately rebuilt will fall down', and 'all the body of the fort wants rebuilding, it being dangerous at present to make use of their cannon, which likewise, with their carriages, are in very bad repair' The twenty-five cannon were composed of two six-pounders, eleven four-pounders and eleven threepounders, for all of which one hundred and fifty shot was held, and there was a swivel ten-pounder on the new spur, with no shot to fit it. The stock of powder amounted to one hundred and four pounds - a ludicrously insufficient quantity, considering that thirty to fifty pounds might be spent on saluting one important visitor. The garrison

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numbered only six - the commander, a sergeant and four soldiers (three mulatto and one black). There were likewise only six muskets, bayonets, cartridge boxes and swords, with three pounds of ball. The slaves numbered sixty-two, all of whom were unskilled except for two masons, four carpenters, four sawyers and four smiths. The fort owned two fivepaddle canoes and six two-paddle canoes. The trade goods were valued at CJio6.

Three months after the Humber survey, the fort came under siege. The war arose out of various minor disputes between the paramount Chiefs of Dixcove and Ahanta, who were in the pay respectively of the English and Dutch companies. John Roberts, the English Governor, arrived from Cape Coast to settle the trouble, with no thought of compromise, while the Dutch representative at Butre encouraged the Ahanta to be equally obdurate in negotiation. Meanwhile, both sides secretly planned aggression. Roberts wanted to raid the Ahanta capital (only a mile from Dixcove) and seize the leaders, but found himself too short of muskets; he had ordered two chestfuls to be sent from Cape Coast by canoe, but through 'some tremendous blunder', they were not put on board, and without them the arrival of twenty-five African soldiers (Cape Coast 'men of war') did little to strengthen his hand. The intention of the Ahantas was to capture Dixcove, town and fort alike; for this objective, ammunition was being issued to them from the Dutch fort, so Roberts afterwards alleged. He seems to have had no inking of their decision to fight, and took no precautions. The fort was unfit to resist attack, the recently built part being 'entirely open and bare - not the least parapet for defence'; moreover it contained very little ammunition and only one keg of musket-ball, while very few cartridges were ready filled. That was its condition when, on April 13th, 1750, friendly Ahantas gave warning that an assault was due in a couple of days. The enemy, they said, were 'in no fear of the ordnance as there was no parapet to defend the garrison from their small arms, so that the great
guns could not be fired above once'; the plan was 'to run under the castle walls, where the cannon could not be discharged to annoy them'

Most of the townspeople promptly fled from Dixcove, and the remainder took refuge in the fort or beneath its walls. The effectives among them composed perhaps half of Roberts's force, which now amounted to roughly a hundred; he must have had about thirty African soldiers of the Company's, and the balance was made up of the fort slaves and servants and canoemen; there were also some three hundred noncombatants. All hands were immediately put to work. In three days, the 14th to the 16th, a parapet of boards, wedged in place with stones, was built along the whole length of the recently built platforms, and on

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the 17th it was 'enlarged' On the 16th, four six-pounders were moved to the spur and brought to bear on every part of the town, while other rusted guns were scaled. Meanwhile the surrounding ground, within shot of the fort, was cleared of bush.

On the 18th the Ahantas entered the town and occupied it, after some scouting and skirmishing which cost the defence one killed and eleven wounded. On the next day they surrounded the fort, and from 3 p.m. to after 7 (i.e. nightfall) attacked it on all sides with, on Roberts's estimate, three or four thousand men, firing their small-arms lavishly; 'they came quite under the castle walls, and in the end, after a sharp contest, retired,' having inflicted neither casualties nor damage. The fort was then desperately short of ammunition. But a French ship, called the Providence Queen, entered the Road, and Roberts lowered messengers by ropes and obtained supplies from the captain. The unpreparedness of the fort is evident from a letter - probably the second which Roberts sent that night - which asked for 'all your lead bars and ball you have, with ten iron bars, iron shot for six-pounders, match, or any ball you have from six- to one-pounder, a cask of beef, some tea and sugar', and an afterthought - four or six dozen of wine and any warlike stores. A couple of days later, the Providence Queen had embarked the wounded and sailed for Cape Coast, obviously without having fulfilled all his requirements, for on the 23rd he wrote applying for help to 'the captain of a ship unknown, off the Road'

The Ahantas pressed the siege vigorously; at any rate till October, they seldom allowed a day to pass without making an attack, but the fort was being put into a better state of defence. In May, fifty-eight noncombatants were evacuated by sea; as the remainder seem to have been fed without difficulty, the enemy must have been unable to prevent use of a landing-place. Both sections of the town had been burnt soon after the siege began; since the houses had probably been constructed without stone, perhaps of brandes and thatch, the whole area must have been thoroughly commanded by the guns of the fort. By July 21st the parapet along the southern frontage had been entirely reconstructed with loose stones instead of boards, 'portholes' being left for the guns. In August Roberts felt able to give up the command and return to Cape Coast. He left written instructions to Mr Nassau Senior and two other officers who took over from him; among other things, they
were to keep an emergency magazine in the tower and to make sure that no enemy were around before allowing women to fetch water from the pond - situated in one or other of the fort gardens, presumably. The defences were still being improved, to judge by the present of half a gallon of rum 'to the free people for loading the canoes with limestone and bringing them

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[sic] into the castle' on September Ist. On the 3rd, Senior issued three gallons of rum 'to all the people in the fort after this day's engagement with the Ahantas'; on the 4th they received five gallons 'during and after this day's engagement' On October 11th a gallon and a half went 'to the Company's slaves and free people building a new powder-room and taking the roof off the old' Liquor for the officers was periodically brought 'into the Hall Cave' to be consumed at the public or hall table.

The fort was inspected on December 22nd, 1750, while still under siege, by H.M.S. Surprise. It was found to be 'in tolerable repair except for three-quarters of the parapet, which is raised with loose stones and planks' The statement proves that the spur, since its share of the perimeter was shorter than that of the older buildings, cannot have been the only part which had been left without a parapet till April. The proportion of three-quarters would have been correctly estimated if, in addition, a new outer line of defence, first shown on a plan of 1756 (Fig. 35), had already been built along the south, linking the end of the spur with the east curtain. But none of it had been even begun by January 11th, only three months before the siege, and in that short time the builders can scarcely have brought up to platform level, and filled, two bastions, the intervening curtain, and a wall prolonging the east curtain - in all, over one hundred and seventy feet of new external face, unusually well constructed and backed with free-standing masonry. They may, however, have finished the bastion between the spur and the rest of this projected line, because on January 11th they were demolishing the last remnants of previous flanking works on the site, and if the gap had remained open till the siege the voluble Roberts would certainly have mentioned the fact. But the spur and this south bastion together would have barely made up half of the total perimeter.

The occupants of the fort, according to the report of H.M.S. Surprise, comprised two officers, a sergeant, five soldiers, a gunner and drummer (both African), ninety-seven effective free men with their families, eleven male castle slaves, three women slaves and a girl. The list of guns shows that important additions had been made since January; there were now ten six-pounders (with two hundred shot), eleven four-pounders (with one hundred shot) and seven one-pounders (with seventeen shot); every gun was mounted. The gunpowder in hand amounted to eight hundred pounds. There were one hundred and seven muskets, and three hundred pounds of lead ball. Other stores included a barrel of beef, seven casks of dried fish and eighty chests of guinea corn (sorghum), each containing about two and a half bushels. The fort owned only two small canoes; those listed in January must have been destroyed, probably when the Ahantas burnt the canoe-house.
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The war dragged on into 1751, in spite of English attempts to induce the Dutch Governor to stop it. The financial loss must have been extremely serious, but at no time does any injury appear to have been caused either to the fort or to the occupants. Their worst annoyance, in fact, seems to have been the occasional sight of a Dutch flag where the cross of St George should have waved; they regarded even an uninhabited islet as 'His Britannic Majesty's ground' The sentiment illuminates the relationship between fort and tribal state.

In May 1751 a Committee of Merchants Trading to Africa formally took over the forts of the bankrupt Royal African Company. Soon after, Dixcove was again inspected by the navy, and eleven of the guns were found in poor condition. The war had ended, but the garrison remained above the average strength. In January 1752, when Senior was still commander (on a salary of £100 a year), he had a sergeant and a gunner (both at £36), and eight soldiers (at £27). The tribal Chief, who was recognized as the 'ground landlord', was paid £12 a year.

Since the forts, though uneconomic in themselves, were essential to British trade, the Crown continued to pay an annual subsidy to the Committee of Merchants, as it had done to the Royal African Company, and an inquiry into the Committee's affairs was therefore made by the House of Commons in 1758. Expenditure had run too high, and one of the causes was the amount of repair, which was needed with outrageous frequency; evidence was, therefore, collected upon the current methods of construction. The captain of the Humber asserted that no one on the Coast understood how to build in stone or how to bake bricks properly for the latter judgment, perhaps, relying on the report that his officer had made at Dixcove in 1750. The spur, then on the point of completion, consisted almost entirely of locally baked bricks, and there must have been enough broken pieces lying around to reveal their crumbly consistency. In 1756 Senior, as commander of the fort, was asked for information, and replied that these local products had proved as serviceable as bricks imported from Europe, provided they were kept well covered with tarras (the waterproofing composition used on the flat roofs), 'but when the rain gets to them it soon wears them away' By this time, there was nobody left at Dixcove who could make bricks; indeed, there were only two skilled men in the fort - a white soldier, who was the blacksmith, and a slave carpenter. It would seem that Dixcove cannot have supplied much, if any, of the trained labour required for the building of the spur; other forts must have lent brick-makers, bricklayers, masons and carpenters.

In May 1756, Justly Watson, a Director of Engineers, spent eleven days surveying the fort, with the aid of a trained assistant. He is far the

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most reliable of all the old sources of information. His list of guns, however, is accompanied by the warning that, for lack of calipers, he might not always have judged the size correctly, and that he could not examine their condition with
adequate thoroughness. So far as he could see, only four guns were really serviceable and one was in ‘middling’ condition, while the remaining twenty-one were unserviceable; most of the carriages were decrepit. The largest gun, a nine-pounder on the south-east bastion, may possibly be identified with the alleged ten-pounder which in January 1750 stood on the south-west spur curtain but in December of that year was not mentioned; it faced towards the anchorages in Dixcove Road and so commanded the approach of ships' boats. The other guns comprised eight six-pounders (two less than in December 1750), eleven four-pounders (as before) and six (instead of seven) one-pounders. Probably the ordnance had been changed by the expedient of transferring guns from other forts; they can scarcely have been new on arrival, in view of the bad condition reported by Watson. The densest concentration, naturally, was on the north bastion, where a six-pounder was accompanied by three four-pounders (which by Watson's time were unserviceable); the other six-pounders formed the sole armament along the north-west and west of the spur and inside it, and the one-pounders that of its south side and of the south-west bastion. The scheme of defence, therefore, was meant to provide for long-range fire down into the town, where enemy forces had in fact been bombarded in 1750, and against the mouth of the cove; the four unserviceable six-pounders on the north-west of the spur may well have been those which were moved into place just before that war began, ready for the threatened massing of enemy at the foot of the unparapeted walls. Grape-shot must also have been available for the six-pounders, since one of them was placed in the spur courtyard, the 'Parade'. The gun platforms, according to Watson, were all in good or 'middling' condition, that of the north bastion being under repair, while the fort generally was 'in good order', and 'kept constantly whitewashed and plastered'.

His plans, of the ground floor and of the roof level, are consistently excellent (Fig. 35). By this time both ends of the spur had been joined up with the old buildings, and the stairs completed at the junctions, while the outer wall in front of the original south curtain had been consolidated into a wide battery, and new bastions had been built at both ends of it. Of the bastions which in 1750 had been in bad condition, one had thus been replaced on a different site, whereas the two on the north retained their previous site and outline, though the walls had been greatly thickened to safeguard the powder magazine it now contained.

FIRST FLOOR

Flo 35 Dixcove Fort. Upper and ground plans, May 1756

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The tower over the gateway - which was the commandant's diningroom - may have been repaired, though a complete reconstruction seems unlikely because, in spite of being now far distant from the exterior of the fort to south and west, the roof
was still meticulously equipped for defence; a little special plan of Watson's represents a battlemented parapet, containing musketry slits, all round except at the south-west corner, where a flagstaff stood. The inner courtyard had been cleared of another old building along the north side. A new latrine occupied part of the site of the former south-east bastion. A 'portico', resting on four pillars, had been added outside the gateway of the spur.

Outbuildings, shown on the plan of 1756 (and on no other), stood on two platforms, which may already have been paved; they were afterwards united by an extension round the west of the spur. This in all probability was already projected, for Watson himself marked out the site for a 'breast wall' along the north, behind which the townspeople might take refuge in time of war; the construction awaited authorization from London. A route to the cove descended beside the then west end of the platform, by means of eight shelves cut into the hillside. They widened all the way down, unlike the present masonry series of six flights of steps and five landings, and can scarcely have been made in conscious preparation for that work. The fort was indispensable, so Watson reported, because nowhere else could the English procure the lime and the timber needed to keep their other buildings in repair; the small coasting vessels used for this purpose were, no doubt, among those which were careened in the cove. A small deposit of limestone still existed in the cove, and a larger one lay three miles to the west, at Akyuma, a village to which the Dutch also asserted a claim. The forests in Dixcove territory had been exhausted, but timber was cut at Bushwa, the rights to which were likewise disputed between the English and the Dutch - though not, it seems, for long. In fact, Bushwa ought to have come clearly within the Dutch zone, by virtue of being Ahanta territory, but the English had been intriguing before 1750 with a dissident section of the tribe, and no doubt the whole population would have preferred to trade freely with both Companies. The Dutch persisted in their claim to Akyuma, and during the next half-century made several attempts to take possession.

Watson's judgments on the guns may have been rather too severe, for on November 18th of the same year (1756) a survey by H.M.S. Assistance reported no more than sixteen in bad state, though the total remained unchanged at twenty-six, ranging from one- to nine-pounders. A stock of three hundred and thirty shot was held. The establishment is listed as four officers, and a white soldier, three mulatto soldiers, four 307

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free Africans, fifteen male and fifteen female slaves. Since only six muskets and bayonets were held, the exceptionally large number of officers can scarcely have been due to any threat of attack.

Every British warship on the Coast now had instructions to examine the condition of the forts, but the reports - at any rate as summarized are superficial. In 1758 and throughout the following twenty years the number of guns is frequently stated as thirty-four (and the occasional slight discrepancies should probably be attributed to mistakes). The establishment fluctuated within the extremes of one to
four officers (at most times three), two to fourteen subordinates and soldiers, six to twenty-four male slaves and thirteen to twenty female slaves; the constant changes illustrate the system of lending personnel from one fort to another, whenever each had need of artisans or unskilled labour, or was involved in difficulties. The number of soldiers - usually three - rose to five in 1758 and six in 1773; the increases suggest tension at the least. The state of the fort remained generally good, though in 1760 the steps to the rampart were rotten, being 'all of wood', in 1764 'the warehouses and chief apartments' were in bad condition, and in 1722 'the tower etc.' needed repair; five years later, the tower needed a new roof. The guns were in abominable condition by 1777; in many, the touch-hole had expanded to a diameter of half an inch, and in some, to an inch and a half. Extensive repairs, and possibly some additional building, went on throughout most of 1778, to judge from entries in the Governor's diary. On January 22nd he sent to Dixcove three sawyers, three labourers, two bricklayers, a carpenter and a smith. On May 2nd he notes that the work of cutting wood and gathering limestone was to be done entirely by the fort slaves, but Cape Coast would supply a bricklayer. On May 14th, when two carpenters were transferred from Dixcove to Beyin, tools had to be borrowed for them from the Dutch fort at Butre. On August 1oth Dixcove applied for the promised bricklayer; he returned to Cape Coast on September 18th. A proposal to re-roof the tower was received there on August 18th.

The forests behind Dixcove had been cleared as early as 1756, and were again 'quite exhausted' by 1779. In 1780 a Minute of the Council (at Cape Coast) stated that 'what has been got for some years past has been carried by land at a great expense from four to six miles', and Fort Apollonia at Beyin was now taking the place of Dixcove as a source of timber. A war between Britain and the Netherlands, which broke out at the end of 1780, was desultorily prosecuted on the Coast. Minutes of the Council allude, on June 9th, 1781, to the Dutch 'having armed the free natives of the Ahanta country to attack our fort at Dixcove', and on August 28th, 1782, to sending a sloop there, the fort being in urgent need of supplies and cut off by the Dutch by land. The situation afterwards calmed down, but peace was not signed till 1785.

On November 8th, 1787, the Council decided to buy presents for the five Dixcove Chiefs, 'who have really small stipends, do much work for the Committee in hauling timber and carrying planks through very bad paths, and for which they receive very small payments, add to which they carry public letters (except to Apollonia) gratis'. In April 1788 the outbreak of a serious quarrel between the two towns of Dixcove implies that no external peril was then imminent, though on December 29th the Council, when protesting to London that a surgeon ought to be stationed at Dixcove instead of Sekondi, refers suggestively to 'the complement of soldiers', as well as to 'a great number of slaves, who are frequently hurting.
themselves and in want of surgical assistance' Large timber was again obtainable from Dixcove.

Another hint of trouble may perhaps be seen in a Council Minute of July 5th, 1792, which refers to the establishment of the fort: 'The allowance of £600 is inadequate to support it on account of the great increase in the said establishment.' However, tranquillity prevailed on December 29th of that year, for orders were issued 'to burn and send down lime from Dixcove' for repairing the fort at Accra. And, by agreement, no hostilities between the British and the Dutch occurred on the Coast during the Napoleonic wars.

The latest of the old views of Dixcove was published in October 1806, among a set of prints dedicated to the Duke of Clarence; it was based on an undated drawing by George Webster, which has been preserved. The engraving was enlivened by the addition of shipping, but scarcely differs so far as the fort is concerned; such minor changes as were introduced appear to be arbitrary, and the drawing obviously gives the better evidence. It is a hasty sketch, and poor work even for Webster's limited abilities; obviously he did not go ashore but worked entirely from a boat or from a rock in the cove, with the result that he failed to realize shapes that he saw foreshortened or blurred by distance. He travestied the rocky promontory into a smooth expanse scarcely rising above sea-level, and distorted the spur bastions into absurdly tapering projections of indeterminate form; he also drew some details confusedly. But unquestionably he aimed at a faithful representation, and he happened to choose a viewpoint from which he could reveal all the important changes in the fort's appearance since Watson's plan of fifty years before. The tower no longer existed, nor did the portico outside the spur gateway, but the bell-turret above is shown, where there had been musketry slits in 1756. The north intermediate bastion had been rebuilt, and looked exactly as at present (Pl. 8ib). A muddle behind its parapet seems to represent the existing sentry-shelter on the north-east bastion, and another such shelter occupied the nearest corner of the northern spur bastion, where no trace of it remains. Outside the southwest curtain stood a gabled shed, more or less where the cows had been kept in 1756. A detail not otherwise known is that the parapets of the west and north curtains rose several feet above those of the spur of the north bastion.

Dixcove Fort had never been commercially successful, and became a heavy liability in 1807, when it was no longer allowed to participate in the slave-trade. Henceforth the exports were limited to small amounts of gold, ivory and palm oil, in exchange for India and Manchester goods, and, to a lesser value, for rum, gunpowder, iron and lead bars, etc. The value of the trade was less than at any other English fort except Commenda, so Parliament was told in 1817; these and other minor forts were no better than 'laughing stocks', involving expenditure out of all proportion to the receipts. Dixcove in 1814 cost nearly £1,600, including £86 spent on repairs and £80 on firing salutes; the establishment comprised the commander and the surgeon (whose salaries had been suddenly doubled, to £20, to
compensate them for the loss of commissions on exported slaves), a sergeant, a
gunner (still at $36) and six soldiers (likewise paid at the old rate of £27). Annual
payments were also made of £30 to the Chief recognized as 'ground landlord', and
£40 to the Paramount Chief. The number of soldiers may normally have been
slightly less, since the annual charges are said to have averaged £688 instead of
the £704 to which these sums amount; the irreducible minimum, however, would
alone have caused the fort to be hopelessly uneconomic. It would, no doubt, have
been abandoned but for the natural assets, on account of which Watson had
recommended its retention in 1756. The cove still provided the best landing-place
available on the Coast to English ships. Lime could still be procured there, from
Akyuma, which the Dutch continued to claim; the village chief defied them,
displaying a St George's cross on his flagpole. Good timber may have remained
scarce, but as an ex-commander of the fort stated, 'any quantity of good wood
may be obtained at short notice' on payment of 5s. od. per billet (of firewood,
evidently).
The armament of the fort consisted in 1815 of fifteen six-pounders and thirteen
three-pounders. In 1821 there were fifteen mounted six-pounders, thirteen
mounted and two unmounted three-pounders, and a mounted two-pounder. A year
later, it was reported unsafe even to fire a salute with a diminished charge from
any gun.1

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In 1822, when the Crown took over the administration of the forts, Dixcove was
among the few of which the maintenance was approved; the building was in good
state, and there were seventeen male and fifteen female slaves. Seven years later,
a proposal that the British withdraw altogether from the Coast roused so much
opposition - and, among the Africans around the forts, alarm - that a Committee
of London merchants was again put in charge; they received a grant for
maintaining only Cape Coast Castle and the fort at Accra. Dixcove, however,
remained occupied. In 1843 it reverted with the other forts to the Crown, but was
no longer garrisoned, The need for small fortified outposts had ceased as British
powers were gradually extended and security improved. But in the Ashanti War
of 1863 four guns were sent to the fort in case it should be attacked.
In 1867 a logical but fatuous intergovernmental agreement transferred the
Dixcove protected area to Dutch rule. The inevitable intertribal difficulties
became aggravated owing to the fact that the Dutch district officer was stationed
at Butre, and in 1869 he followed precedent by inciting and aiding the Ahantas to
attack the town, which he simultaneously bombarded with the fort cannon. All
this was vividly described by a native of Dixcove, Africanus Horton (M.D.
Edinburgh), who was a medical officer in the British service. He uses the name
'palaver hall' for what must be the present Council Hall.
In 1872, when the Dutch Government sold all their holdings to the British,
Dixcove Fort was in excellent condition. The name conferred upon it by the
Dutch, Fort Metaal Kruis ('Brass Cross'), became anglicized into Fort Metal
Cross.
After the proclamation of the Gold Coast Colony in 1874, the fort became an administrative station, and suffered numerous alterations to adapt it to the needs of a District Commissioner's residence and offices. This use ceased about thirty years ago. But the State Councils of Upper and Lower Dixcove continued to hold their meetings in the hall, a room was given up to the post office, and the police took over the spur. A wooden rest-house, on top of the west curtain, provided quarters for official visitors; some of the old rooms were allowed to decay. Such was the condition of the fort in 1954, when a considerable part of the structure collapsed. The Monuments and Relics Commission was then authorized to undertake a general restoration, on condition that an adequate rest-house be provided. This was largely met by rebuilding the fallen rooms, and by substituting for the wooden building a tower similar in outline to that which formerly gave a centre to the whole design. Sanitation also necessitated new buildings, which have been inconspicuously placed. The fort has in the main regained the appearance it presented two hundred years ago, though its structure has been renovated so far as seemed necessary to preserve it. All the modern work can be readily distinguished, except perhaps for two restorations: the arch over the original entrance, and an extension of the drip-course on the same facade. A number of old features were discovered in the course of repairs, and have been left exposed wherever feasible.

II DESCRIPTION
The fort stands some forty to fifty feet above the sea, on the plateau slightly inclined to the west - of a small promontory (P1. 80). Open sea lies to the south and west, the cove and beach to the north; on the east the ground descends to a narrow col which joins the hilly mainland. South of the fort, the ground first drops quickly, and then levels off towards a low cliff above the sea, one to two hundred yards from the walls; the slope was occupied, as early as 1727, by a garden and the huts of permanent slaves. Towards the west a steep descent begins thirty feet from the walls; it is overlaid with tumbled boulders as it nears the mouth of the cove. On the north the fort is similarly set inward from the brink of an almost equally steep but even descent to the flat beach along the cove, where most of the town must always have been congregated. Some of the large stone-built houses there, of two storeys, are identifiable on drawings of 1844. A similar house overlooks the col and bears a marble slab with a well-cut inscription, recording that in 1854 Charles T Abbot, 'J.P and Commandant of Dixcove', authorized the use of the land, upon which an African began to build in 1858; the University of Ghana possesses a manuscript diary by Alfred Triggs, a young Englishman who stayed in the house in 1867 and described it in detail.

The easiest approach to the fort is along the col (where a motor road was built in 1926 up to the north-east bastion; it passes over the foundations of some building and cuts across an eroded cemetery from which, after heavy rain, gold ornaments, nuggets and early trade beads have been collected from time to time). The direct route from the cove leads up an admirable stair of masonry, generally twelve feet wide, which was built later than 1756 (P1. 8ib). The six flights, of seven steps...
apiece, are separated by broad shelving landings at which the direction changes slightly. On either side runs a parapet a couple of feet high, stopped, wherever the adjacent ground comes level with the paving, by a pillar with a pyramidal top. The paving consists of irregular slabs, chiefly of granite, and in many cases waterworn as though taken from the shore. The stairhead encroaches upon a platform, which likewise is paved.

DIXCOVE FORT with irregular granite slabs and edged by a low parapet, probably the cut-down remnant of the 'breast wall' recommended by Watson in 1756. The eastern portion of the platform, outside the original north curtain, has been eroded. The western portion, which did not exist in 1756, maintains a width of some thirty to forty feet behind the curving parapet till it has turned the north-west corner of the spur, and passed the gateway. The edge then returns, and the terrace contracts to fifteen feet beside the south-west bastion. After an eroded section, where the level must have dropped, at some twelve feet beyond the corner the paving expands again to more than twenty feet in width, and so continues along the south-west side of the spur (where the cows were kept in

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the southern external defences were built between 1747 and 1756, and the north intermediate bastion between 1756 and 1806, but suggest that most of the square fort of 1698 may still be preserved, at any rate in outline (Fig. 36). The original, now inner, south curtain is known to have been more or less rebuilt before 1727, and the north curtain has been altered since 1756. Examination of the original
west curtain has shown signs of repeated alterations after it ceased to form part of the external defences. But that much of the north-east bastion (Pl. 82a) and the east curtain go back to a relatively primitive age is obvious from their crude and mean appearance, compared with the elegant practicality of the fortifications datable to 1747-56, or the utilitarian strength of the latest addition, the north intermediate bastion.

The senseless irregularity of plan in the north-east bastion must be due to a series of piecemeal reconstructions. Its walls, which now consist of close-fitting rubble and very good mortar, had become ‘very much out of repair’ by 1750 but must have been put to rights soon after, for in 1756 the condition aroused no comment. A later piece of reconstruction must have been responsible for the west flank, which does not conform with the plan of 1756 and may well be contemporary with the north intermediate bastion. The triangular sentry-shelter, which first appears on the view of 1806, entailed virtually no rebuilding but merely a brick addition, to bring the height of the parapet there up to reasonable headroom; only at the very point was the parapet cut down level with the tops of the slits, for the insertion of the sentry's look-out. This took a form customary at other forts; a block fifteen inches square, turned point outwards, fills the apex of the bastion, between two rectangular holes which meet within and so constitute a double look-out through the converging walls; the height is about nineteen inches and the span of each must average about eight inches - it narrows slightly towards the top. The shelter bore a flat roof, composed of a sort of stucco (presumably tarras) laid over boards; the front rested on a brick cross-wall, overhung by the roof like a cornice, and containing a low doorway beneath a wooden lintel. The style suggests a date nearer the upper limit of 1756 than the lower of 1806.

The existing parapet of the bastion is likely to have resulted (in the main) from the reconstruction of 1750-6. It is seventeen inches thick, and the outward-sloping top stands four feet six inches above the paving. The existing openings (if we ignore the sentry-shelter) correspond exactly with the plan of 1756 (Fig. 35); each flank contains an arched port and a slit to either side of it, each face an arched port between two slits. The same arrangement was used in 1756 on every other bastion of comparable size except that at the middle of the north side (the original north-west corner), where each face contained only one slit to either side of the port, and the flanks had nothing but a gun-port apiece; since that was the only other bastion which could then have been more than six years old, the difference in scheme should imply a difference in date, in which case the parapet of the north-east bastion must be classed among the late works. The slit-openings average ten inches square on the inward face and resemble those on the original south curtain, but the same type is found on parts of the spur and on the latest of all the defences, the north bastion. On the north-east bastion the gun-ports, without exception, are arched, splay outwards from the inner corner, narrow downwards and slope outwards at the base. They vary considerably in dimensions. In two extreme examples, the base stands six and twelve inches
respectively above the pavement and measures thirteen and seventeen inches wide on the inward side, the arch begins to spring at twenty-six and twenty-four inches and rises five and eight inches higher. To some extent the divergencies seem carefully related to the respective fields of fire; evidently the varying heights of the base correspond with the slope of the ground outside. Similar divergencies occur for the same reason on the spur bastions - another hint that this parapet may be no older.

The bastion itself, however, conforms with the earliest representations of the fort in that it was defensible through the walls as well as from the roof; almost eight feet lower than the slits in the parapet is a row of taller slits, which splay to almost square openings within - two through each long wall, and one through each flank. They were defended from the upper of two rooms inside the bastion. The intervening floor was wooden and rested partly on a rebate in the walls, but mainly on beams, the holes for which are still visible. Another set of beam-holes is just below the existing stone paving of the roof-platform and presumably dates from a period when there was a wooden roof. Another early relic protrudes from the inner face of the west flank (which externally must be late) ; it consists of an irregular expanse of very rough masonry, with a maximum width of five feet six inches, projecting six to nine inches from the rest of the wall face, and the top is cut across by the floor rebate. The only explanation would seem to be that here we have the broken extremity of an early north curtain.

The back of the north-east bastion has been exposed only since 17501756, when a two-storeyed building within was demolished, creating need for an inner parapet. This rests on superimposed archways which gave access to the two rooms inside the bastion. The lower archway is approached by three steps which curve between the north and east curtains; the top step extends back into a passage till it meets a tall sill -

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there was no door frame. The door, hinged behind the sill, was a heavy grill of wrought iron, with a bolt which must have been secured by a padlock (Pl. 82b) ; a modern replica has been substituted for the somewhat decayed original (now in the National Museum), which is clearly a work of the eighteenth century. The reason for fitting a door of this unusual and expensive type is clear from the plan of 1756, which marks the ground floor of the bastion as 'Slave Room' In order probably to frustrate any attempt at breaking away the masonry into which the bolt slid, the passage is contained inwards by a prolongation of the slanting extremity of the east curtain.

The lower arch is overlaid only by sufficient masonry to form a flat upper archway, which is extraordinarily tall, and so it too is overlaid by only sufficient masonry to make a flat base for the parapet. This economy entailed the use of a strange expedient to weatherproof the head of the upper archway; it is blocked by a screen wall above and on both sides of the doorway which gave access to the upper room. While the outer face of the archway is flush with the north curtain, the screenwall, with the doorway, is set as far inwards as possible - upon the back
of the lower arch - and askew, so that outside the sill lies a step which widens
towards the east end, forming a miniature landing; a wooden stair or ladder must
have risen to it from the court. The weight of the screen-wall above the door
frame is taken off the wooden lintel by a relieving arch of brick, embedded in the
fill. The bricks are of the type baked locally around 1748, and obviously there was
no need for their presence till the demolition in 1750-6 of the two-storeyed
building behind the bastion. Nor can the arches themselves be appreciably older
than the brickwork, unless the plan of 1727 (Fig. 32) was extraordinarily
inaccurate; the scheme it represents bears no relation whatever to that now
existing. Moreover, the plan is corroborated by that of 1750 (Fig. 34), which
shows, behind the two-storeyed building, a gap between the curtains, each
stopping a couple of feet short of the point at which they would meet. (A similar
gap is shown at the entrance of the south-east bastion, where again the plan of
1727 marks a bent partition.) The archways must therefore be dated between 1750
and 1756, when Watson drew the entrance in its present form.
The gap between the curtains in 1727 and 1750 accounts for the slanting
extremity of the east curtain; the bend occurs precisely where the plan of 1750
shows the end of the curtain. The reason for closing the gap in a north-east
direction, instead of merely prolonging the curtain northward, must have been in
order to secure a wider entrance to the bastion.
A doorway through the east curtain must have been pierced not long
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after 1872, when the fort ceased to be kept in a state of defence, but was
afterwards blocked - perhaps because the decay of the wooden lintel threatened to
cause a collapse of the wall. The doorway was reopened in 1954, in order to allow
the entrance of materials for the restoration of the fort, and has been preserved to
serve the original purpose of giving access to a lean-to shed outside the curtain.
The former shed reached from just south of the doorway to the north-east bastion,
in which the edge of its roof remained embedded in 1954.
The external parapet of the east curtain, according to the engraving of 1709,
contained a row of slits for small-arm fire, such as are marked also on the plan of
1756, with the addition of a gun-port. The existing parapet contains no visible
port but only a row of slits, which externally have the dimensions, usual
throughout the fort, of about eight inches high by three inches wide, but splay on
the inner face to an exceptional width - some to as much as eighteen inches. The
peculiarity need not indicate any difference of period, because the habitual ten-
inch splay would, in fact, have provided too narrow a field of fire on this curtain,
which commanded an exceptionally wide outlook.
In 1727 the east curtain was backed by a two-storeyed building, which had been
demolished by 1750, leaving the inner face exposed; it consists of rubble of the
worst quality, laid in clay. An inward parapet, which must have become requisite
as soon as the roof-platform was destroyed, projects some six inches over the
courtyard, whereas the parapets along the north and south of the court stand flush
with the walls below. On all three sides the height is roughly two feet and the
thickness nine inches, and the top slopes outwards, dropping four inches. The east
wall-walk is paved, as usual, with irregular slabs set in lime mortar. The rain that
fell upon it was discharged through four little arches in the inner parapet; they
average some fifteen inches in width; the sides rise upright for nine inches and
then curve to four inches higher. Only the one near the south corner of the
courtyard opens level with the pavement, and its floor is traversed by a drainage
channel; every other is blocked to mid-height by a sill, pierced to convey water to
a spout. The roof-platform behind the north curtain was demolished between 1750
and 1756, and an inner parapet must have been added without delay; it is solid,
like those on the west and south buildings.
Of a two-storeyed building along the south of the courtyard,2 behind the early
curtain, the western half alone survived till 1955, but the upper portion was then
hastily demolished, to forestall the collapse of the roof and walls. Bigger windows
had obviously been fitted to the rooms, which otherwise might have been little
altered since Smith drew them in 1727; the parapet he represented - so differently
from the engraving of 1709 -
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still remained, though it had been much reduced in height and all apertures were
filled solid. It was found to contain the bases of arched gun-ports with slanting
sides, which had been cut off at a height of only eight inches, and in the middle of
each intervening merlon was a smallarm slit, the top level with the bases of the
ports; the slits splayed within to some ten inches square. The scheme has been
reproduced in the modern parapet over the restored rooms.
Another notable relic of the early fort is the cistern. It lies near the present centre
of the courtyard, the area of which was greatly increased by the destruction of the
buildings which lined the north and east curtains; the paving, though of irregular
slabs of stone, shows no trace of having been extended and must therefore be later
than the demolition. The cistern is some thirteen feet square; the vault curves up
to one foot six inches below the surface and the depth is fifteen feet. The
drawhead, one foot square, is enclosed by a curb which rises nine inches above
the pavement. Rainwater is discharged into the sides of the cistern by sunken
conduits; the plan of 1756 shows that these were connected with box-drains
standing out from the neighbouring buildings, the flat roofs of which still serve as
catchments in conjunction with metal pipes. The cistern remains the only water
supply of the fort, and no opportunity has arisen to examine its structure. The
remnants of early work in the original west curtain are described either below or
in notes.3
With the possible exception of the cistern, every piece of building attributable to
the early period (prior to 1747) consists of ill-fitting lumps of stone laid with very
wide joints. The clay mortar retained in the backing of the east curtain was
probably typical of the first builders; as time went on, the proportion of lime is
likely to have increased fairly steadily. Wooden lintels seem to have been regular,
and there is no evidence for the use of brick before 1747. The structures of the
mideighteenth century are characterized by masonry of close-fitted rubble in
strong mortar, and by very lavish use of bricks, which were locally baked; although soft and crumbly, they have endured well behind the protecting lime wash and (in some places) tarras. The flat roofs were all coated with tarras. Work began in 1747-8 on a programme to which roughly three-quarters of the existing fort is due, and the first piece, the spur, was nearly complete by 1750. The previous spur, built before 1709, had extended westwards almost as far (to a length of fifty-three or seventyseven feet according to Smith's plan in the original and the engraved versions respectively, compared with the present seventy-eight feet). This early spur had been merely a weak outwork, poorly armed, and defensible only because its low walls were efficiently outflanked and

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overlooked from the bastion and roundel to which they were attached; the existing spur, in contrast, is an integrated extension of the fort, and could mount more artillery than any other part. It could not be adequately commanded from the older buildings, because the broad plan adopted gave little opportunity for firing along the side walls, and none of firing beyond the west end. Instead, the batteries upon the spur itself enabled a tremendous concentration of fire-power to be directed to either side, or upon the platform outside the gate, or upon boats entering the cove, over which there had previously been no control; only the slope down to the shore remained ignored, because it was too steep to be effectively commanded, and the boulders scattered over it would have given too good cover. The opening through which each gun fired was individually planned to cover the desired field. The parapet of the spur is eighteen inches thick on the curtains, twelve inches thick on the bastions (probably because there it consists more of brick than stone); the average height is about five feet four inches on the inner face, from which the top slopes out and downwards. Two slits were placed between each pair of gun-ports, except at some corners of the bastions where the number varied between one and three. Only those on the south side of the south-west bastion belong to the type prevalent elsewhere in the fort - three inches wide by eight inches high, and splayed inwards to some ten inches square. The remainder, to which parallels exist on the north curtain alone, splay both outwards and inwards from the middle, where the width is less than two inches and the height nine inches; internally they measure twelve to thirteen inches square. The ports on the curtains have been altered or destroyed, but those on the bastions retain their original shapes. The four on the north-west bastion differ in every particular except that all are arched and slope downwards externally. One, which faces along the northwest curtain, opens thirteen inches above the paving and is twenty-four inches high at the centre, the width is twenty-two inches internally, and the sides splay both ways from a point slightly outwards of the middle. The next faces north and is similar except for having a slight single splay. The westward port, directed towards the mouth of the cove, likewise opens thirteen inches above the paving but its height is thirty-two inches high at the centre, and it splay more definitely, again only outwards. The last, which commands the gate, opens only four inches from the paving and is thirty-one inches high at the centre; the outer side splay slightly
outwards and the other splays inwards, so that the shot could not strike the west
curtain or the gate. One port on the south-west bastion has been cut down to a
rectangular gap, but the other two are still arched; both open only four inches
from the paving, but the base

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slopes downwards in the one which commands the gate and is flat in the other,
which looks towards the mouth of the cove; the upright sides splay both ways
from the middle and contract just below the arch. The ports along the north-west
curtain retained their arched tops in 1806, but were subsequently converted into
rectangular gaps, which resemble those that already existed on the north bastion
by 186, except that they open only nine inches above the pavement.
The continuous batteries of the spur are paved with close-fitted slabs of purple
stone, interrupted by brick where vaults underneath rose to that level; the bastions
alone are solid, the platforms behind the curtains are formed by the roofs of one-
storeyed vaulted rooms and by the roof of the vaulted gate-passage, which
stretches inward to the same distance as the rooms on either side. An arched bell-
turret, added after 1756, projects upwards from the parapet, over the centre of the
gateway.4
The plan of 1756 shows that the spur parapet continued, without change of style,
along the whole of the south side and around the southeast bastion; the top of the
walls is virtually level throughout (after a shallow step down from the west
curtain of the spur), and so probably was the top of the parapet, but only one piece
of it survives, at the far corner of the south-east bastion, and stands five feet high.
All the rest was replaced, probably late in the nineteenth century, by a curb, only
eighteen inches high. Although the parapet was identical, the southern defences
are not paved in the manner of the spur platforms but with less regular stones,
levelled with a coating of lime concrete, which apparently is not of recent date. In
1756 flagstaffs stood on both the south and the south-east bastions, bedded into
the curved steps which fill the apex.
The truncated form of the south intermediate bastion (or rather, half-bastion) and
the abnormally lateral direction of the south-east bastion may have been designed
to counter the unevenness of the site; the ground falls too steeply to allow of
greater projection. Both are solid. The curtain between them is likewise solid, and
of extraordinary thickness - more than twice as wide as the north or east curtains.
It stands isolated from the original south curtain by an 'area' at ground level (Pl. 83b);
along the edge of the vertical drop runs a brick parapet, slightly over three
feet high and one foot thick, with a lancet opening at every couple of feet,
sufficiently raised above the paving to exclude rainwater.
The loss of the outer parapet has now emphasized the fact that the south curtain of
1750 does not reach the full height of its predecessor in the background, but the
difference becomes less towards the east end.

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There the pavement probably stands less than four feet below the original level of the older curtain's roof-platform (and there may have been a comparable difference in level where the north-east end of the spur met the former bastion). The higher level was attained immediately behind the new curtain, where the original south-east bastion had stood. The gap caused by its demolition was filled by a southward extension of the east curtain, built in stone to the height of the new south curtain, and so thick as to carry a latrine, the brick walls of which reached the full height of the parapets on the old curtains. Consequently they rose nearly three feet above the parapet of the new south-east bastion, close beside. The latrine, which is shown on the plan of 1756, collapsed in 1954. The bricks were found to be baked only on the outside, and contained raw clay at the centre; some had been cast in specially shaped moulds, with one end curved like the cornice of the spur, for which an unnecessary number would seem to have been made. (Specimens are preserved in the National Museum.) The entrance wall, which faced south, was fasciated at the top by three projecting courses. The roof was flat. Though in 1756 there was a window at the centre of each side wall, by 1954 the west wall was plain, and the brick top of the east wall (above the stonework of the curtain) contained two rectangular windows, both twenty inches high but one of twenty-one inches and the other twenty-five inches in width; they are now visible as gaps in the parapet. There was no drain.

In the west curtain of the spur stands the gateway to the fort, recessed under a heavily rusticated arch (Pls 83a, 84). Both leaves of the wooden door must be a fairly recent replacement, but the simple curve at the top of each unquestionably reproduces the original shape; the inward face of the arch is cut back to receive the tops of the leaves, and in the case of the south side the cutting has been preserved intact and appears contemporary with the arch. The passage within is covered with a sloping barrel-vault of brick, marked off from the brick walls by the projection of a rectangular moulding. Six steps rise to an inner gateway, in which there are no signs of a door having been fixed; the sill stands level with the courtyard of the spur.

The trapezoidal court - the 'Parade' as it was called - is paved with stone of several colours, forming patterns; this is unique on the Coast, but at least one comparable pavement remains in an English fort in the West Indies. In the centre lies a circular purple slab, amid an irregular red patch composed of brick fragments; purple rays link the purple disk to the inner of two successive trapezoidal purple bands, which are sunken to act as drains, while the rest of the paving consists predominantly

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of greyish granite, but incorporates other stone of various colours. An inscribed slab (near the north-west corner) looks like a tombstone, and tradition asserts that it covers a Chief's grave. So much of its surface has perished that no complete word is legible, though the language can be identified as English. A line near the top, where the name of the deceased might be expected, ends with 'GINS' in capitals, and other lines are cut in thin lower-case lettering, the style of which enables the figures '97' at the end of the inscription to be restored as the date 1797. The innermost side of the court is constituted by a transverse twostoreyed block, originally the west curtain; the three other sides constitute a Georgian extravaganza, being lined with tall vaulted rooms on one storey behind a continuous facade, incomparably the most ornate on the Coast (Fig. 37; Pls 85, 86b). 6 The walls throughout consist, under much whitewash and some kind of stucco (probably tarras), of locally baked brick. The ornament was mainly contrived by projecting courses, but specially shaped moulds were made for the top of the cornice (some spare bricks of that form being used up in the latrine), while abnormally large bricks were cast for the rectangular mouldings (and spares used to coign a gap left by the removal of the original south-east bastion). In places the brickwork of the barrel-vaults is continued up so high that it shows in the roof-platform, which otherwise is paved with slabs of purple stone. Above each of the rooms flanking the gateway, a rectangular opening through the vault was left for ventilation.

The relation of the spur to the transverse block of the old west curtain (Pl. 86a) is aesthetically satisfactory, though lacking the symmetry preferred in the mid-eighteenth century. The previous layout had included a spur of perfect axial symmetry with the centre of the curtain, but the main feature of the curtain, the watch-tower which rose from the storey above the gate passage, was slightly off its centre (perhaps to give a better view of the north slope, which no other part of the original fort overlooked). The existing spur is slewed, so that its central axis points well south of the curtain centre, and the fact is gratuitously emphasized by the patterns in the pavement. But, seen from the court, the comparatively narrow upthrust of the tower, northward of the centre, balanced the long horizontal expanse towards the south. That the spur and the curtain cannot be unified into one design without the tower has been demonstrated in recent years; so long as a wooden rest-house formed the third storey along the entire curtain, the disproportionate tall horizontal mass appeared totally unrelated to the spur, and after the demolition of the rest-house, the effect was still one of incoherence, until the present concrete tower was built (Pl. 86a). The length and breadth of the old tower are known from the dimensions of the gate passage which supported it, and have been fairly accurately reproduced in the new tower, but in the absence of precise data on the height, the modern structure may be taller or lower by a foot or two. The number of crenellations corresponds with the view of 1727. Other details, such as the doors and windows, bear no relation to any older scheme, but conform with modern requirements.

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The builders of the later spur made some attempt also to adapt the original curtain to suit their design, though most of their projected alterations were either left incomplete or subsequently demolished. A brick drip-course, probably just below the base of the old parapet, seems to be their work; although obviously intended to extend along the whole facade, it stopped several feet short of the south end (to which it was prolonged in 1956). The gateway, moreover, opens between pilasters with fasciated capitals, precisely like those in the spur, and perhaps they were similarly joined by an arch-moulding over the doorway; that must, at least, have been the intention. But the renovation of a window just above, apparently late in the nineteenth century, involved the destruction of the doorhead, arched or not, and a wooden lintel at a low level was inserted instead. In 1956 this was replaced by a concrete arch with applied mouldings, copied from examples in the spur. The intrados of the new arch was then observed to be level with that over a doorway which leads from the back of the gate passage to the inner courtyard; its height is seven feet two inches, and the spring begins ten inches lower. Probably both doorways carried lintels till about 1750; the inner arch (which is segmental) consists of brick, but its jambs are built of poor rubble, except for a patch of brick coigning, which seems a repair of that period. The doorways are not aligned (as the plan of 1750 mistakenly represents them); the outer stands close to the south wall of the passage, the inner against the north wall, as they are drawn on the plans of both 1727 and 1756. In the back wall, opposite the south jamb of the outer doorway, a slit has been unblocked, opening at a height of six feet three inches above the floor; the top, more than two feet higher, is so uneven as to suggest that a stone may have been dislodged. The width splay to sixteen inches on the inner face. The purpose was probably to light the back of the outer door. Two solid staircases now separate the spur rooms from the ends of the old west curtain. Their predecessors, known from the plan of 1756, were drawn as though they consisted entirely of wood except for the lowest portion of the southern stair and a landing slightly below the top of the northern. A naval officer reported in 1760 that all stairs to the ramparts of the fort were of rotten wood. The existing staircases, constructed

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mainly in brick, should perhaps be ascribed to 1778, when several bricklayers in succession were lent to Dixcove from other forts, in addition to carpenters, sawyers and other slaves. At the head of the south stair, a third flight turns back from the platform to the roof of the old curtain, and in this case the brick structure which replaced the timber of 1756 is obviously work of the eighteenth century; the lower steps rise on a wedge-shaped support, the remainder on a bridge which springs therefrom to the roof (Pls 83b, 86a). The bridge spans a prolongation of the landing, built after 1756 in order to reach a doorway which pierced the old west curtain, opening through a concave face which takes off the corner. The lowest flight of the southern stair had, from the first, been connected with the old curtain by the solid base of the landing, but above that level the masonry by the corner still continues upwards as a buttress-like projection curving away from the
old curtain. The projection, therefore, can only be a stump, cut sectionally, of the wall of the roundel which formed the south-west flanking work of the original fort. The internal (i.e. southern) face stands almost upright, but the exterior rises with a considerable inward inclination, as represented in 1709 and 1727. The wall is three feet four inches thick at the level where it becomes measurable, by emerging above the parapet of the landing, and may have contracted almost a foot before reaching the level at which its own parapet was imposed - at the height of the adjoining curtains. The concave inner face of the tower continues beneath the bridge, forming the side of the landing except where it is cut by a wide doorway, leading into the Council Hall of the upper floor; internally, however, the hall is rectangular (and so is the room beneath, which in 1756 was drawn with the corner cut off diagonally). Including the doorway, the total length of the inner face is eleven feet six inches, measured across the chord of the curve, and the maximum divergence from the straight approximates to one foot (at the centre of the doorway); if the curvature had been uniform, the internal diameter of the tower at that level should therefore have been roughly thirty-four feet. The plan of 1727, however, represents the top with a diameter of twenty-five feet across the parapet. Whichever figure may better approximate to the true dimension, the outward extremity of the circumference must have stood upon the site now occupied by the south intermediate bastion.

Through the base of the stair opens a vaulted tunnel, which crosses the site of the tower, from the spur courtyard to the open 'area' enclosed between the original and later south curtains. Only the western end of the tunnel is shown on the plan of 1756; the eastern end was not required till a previously rectangular corner of the 'area' was built over in order to extend the landing above to the new doorway of the Council Hall. The tunnel changes direction beneath the junction of the original and later sections of the landing; the material and width also differ to either side of the bend. The western part underlies the stair, in almost true alignment with the steps, is only two feet wide and consists entirely of brick; the right wall runs inwards about four feet, but the left wall continues four inches farther, and so both join squarely with the end of the eastern portion. The eastern portion, however, opens in a wall (aslant the corner of the 'area') which is not at right angles to its course; consequently the right wall is ten feet long and the left eleven feet. The width of the eastern portion is three feet nine inches. The sides are built of stone to a height of four feet, where a brick vault springs from a rebate; the faces of the brickwork and of the masonry run parallel (except towards the mouth, where the rebate widens slightly), and they seem contemporaneous. The date is probably the same as that of the third flight of the staircase, which is built on top - perhaps 1778. No door has ever been placed across the tunnel, but the west end was blocked up at some date, and re-opened in 1954. On the 'area' side the mouth was provided with a sill to prevent flooding; a drain led under the stone paving of the tunnel and discharged into the spur courtyard. The arch of the mouth is centred below the
west jamb of a tall archway which springs across the end of the landing; the east jamb is provided by the wall of the round tower. (In 1956 the lower part of this archway was filled with a parapet, to prevent accidents; probably for the same reason, the gap had previously been reduced in width by a projection from the east jamb, leaving only space enough to step on to a ladder which gave access to the 'area' after the tunnel was blocked.)

A new defensive requirement arose when the authorities in London approved Watson's recommendation that a 'breast wall' be built along the verge of the north slope, in order to supply a wartime refuge for the population of Dixcove. The existing parapet along the edge of the external pavement, though ignored on the drawing of 1806, may well follow the course he had marked out, and was probably completed in 1757-8; no doubt, the original top included a great many slits for small-arms. Even so, control of the slope below could not be effective without cannon, and was necessary to protect the refugees on the platform, yet no gun-port anywhere in the fort commanded the slope. Most of it formed dead ground to soldiers on the curtains because they stood at a height of less than twenty-five feet above a platform thirty feet wide, and the earlier bastions did not so much as halve the distance to the verge. The new parapet created yet another obstacle; only from the tower can it have been well overlooked.

The motive for leaving the wide expanse of flat ground outside the

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original fort is unknown. Militarily it would seem an error of judgment to have offered such an opportunity for a mass attack; if an elongated instead of a square layout had been adopted, a fort of the same area could have been so placed as to give the occupants a chance of breaking up an attacking force while it was still climbing up the slope - a possibility first obtained by Watson's 'breast wall'. Till then, the sentries on dark nights must have looked and listened anxiously in case a host with ladders should gather beneath the walls.

A solution to the problem was eventually obtained by rebuilding the north intermediate bastion to project straight outwards to a wedgeshaped end and farther than any other salient, so that it commanded the hillside, while the great length of the sides increased the fire-power laterally (Pl. 8ib). It did not reach the height of the previous bastion (known only from the plan of 1756) but matched that of the spur; on the other hand, the width was made greater, as well as the length, so as to afford space within for a much larger powder magazine than before. The, originally pitch-dark, barrel-vaulted room is entered through a vaulted lobby. The walls are much the thickest in the fort; they consist of fairly good rubble between outer and inner faces of ashlar. The structure can be seen in section where a window was pierced through the west flank, late in the nineteenth century, to make the interior serviceable as a prison cell; some air but only a dim light could then enter, between thick iron bars. The parapet, too, is exceptionally strong, being two feet thick and about five feet eight inches high; the top slopes downwards towards the exterior. Open embrasures for the guns divide the parapet, except for one foot at the base, into separate stretches, which are pierced by musketry-slits, externally eight inches high and three inches wide but splayed
inwards to about ten inches square. The slits thus belong to a type found in several parts of the fort, but the embrasures resembled no others (to judge by the plan of 1756 and the view of 1806) till eventually some on the spur were cut down to that shape. The gaps splay both ways from the middle, to twenty-seven inches internally and thirty inches externally. A wide and deep rectangular drip-course, which projects at the pavement level, is also unparalleled on any portion of the exterior, but is comparable to a feature which seems to have been added about 1750 to the original west curtain. The inward slant of the walls is more pronounced than in any other structure.

The bastion is so distinctive in style as to suggest that it was built long after the programme of 1747/8-1756, and it may well have been among the works of 1778; it was complete by 1806. The nearer piece of the north curtain was probably rebuilt simultaneously; it consists of very

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irregular rubble in exceptionally good mortar; the parapet has been destroyed. The remainder of the curtain broadens till it meets the northeast bastion, and seems to have been thickened by a new facing, applied after 1756, possibly in the same operation. But the parapet (which is thirteen inches thick and has been slightly cut down) contains smallarm slits of a type otherwise found only in the spur. The flank of the north-east bastion has acquired a different shape and thickness since 1756, but internally retains part of an early wall-face, so that here, too, the outside must have been replaced, probably at the same time as the curtain. The other piece of late work in this neighbourhood, the sentry-shelter on the north-east bastion, is unlikely to be much later than 1756.

' From the lists compiled at various dates it is evident that the guns decayed very quickly and were replaced from time to time for that reason, as well as to provide weapons of more powerful or up-to-date type. It is therefore not surprising that the total number remaining at Dixcove exceeds that of any particular list. So long as the fort retained its military character, unserviceable cannon seem to have been either left in position, to add to the impressiveness of the armament, or rolled over the walls. After 1872 any gun which formed an obstruction was removed; only on the wide platforms of the spur and the later bastions were they allowed to remain. Those that were kept appear to have been selected for their decorative qualities or their intrinsic interest; some were even remounted when their carriages decayed. The largest, and most handsome, may be identified with the nine- or ten-pounders which had been supplied for the spur, soon after its completion. The unattractive smallest set, six cannon of only 3-in. bore, may have been prized on historic grounds, for they are stamped with lettering: A C (upright) crossed with G R (horizontal). These could be the initials of either the Royal African Company or the Africa Committee, and King George, and the guns may have been among the eleven four-pounders noted in 1750 and 1756. At least fourteen undistinguished-looking guns were dropped over the walls. Few of these remain completely visible; most lie heaped together, and more or less buried in earth, on the slope below the south-west curtain, and among them can be distinguished several
carronades of the early nineteenth century, the latest guns of all. Some cannon were removed or displayed elsewhere; one, for instance, has long stood outside the century-old house which overlooks the fort. The smallest yet known, a signal gun in the possession of the Paramount Chief, was discovered a few years ago at the base of the north-east slope, and soon afterwards was fired repeatedly during the Kuntum ceremonies which are held over the tombstone in the spur courtyard. The metal of the guns generally appears quite sound.

2 The building on the south side of the court, backing the old curtain, suffered a long series of alterations before, in 1954, the eastern half collapsed. This had to be rebuilt from the ground up, except for the east wall (the east curtain), which needed extensive repairs. The western half was then re-roofed and its interior rebuilt, but its outer walls have been preserved. The junction of the old and the modern half in both the north and south wall coincides approximately with an old partition of the interior; the plan of 1727 represents the ground floor as composed of two 'apartments' and the cross-wall between them ran up through the upper storey. It consisted, like the outer walls, of most irregular rubble laid in mud, and thickly coated with mud plaster. The western 'apartment' was afterwards subdivided, as the plan of 1756 shows, into two 'storerooms' with a connecting doorway; another doorway was pierced through the courtyard wall, near the west end, and the older doorway, at the centre of the facade, became a window. At some later date it was re-converted to a doorway, and a window was pierced immediately east of it. All three openings are preserved. The upper west room may have remained undivided, as the disposition of the windows suggests, till about V28

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1900, when a concrete partition was built to separate two offices; it was placed between a pair of windows in the north wall, but the only window on the south came within the smaller, eastern office. The windows are unusually proportioned, the height being nearly two-and-a-half times the width; the one in the south wall, which is the original south curtain, cannot have existed before 1749-50, when the outer line of defence was built.

The room in the east half of the south block, and that above it, had been gutted and renovated (with girders and concrete) about 1900-20; outside it, in the court, stood a monumental staircase of slightly earlier date (though incorporating some corrugated iron sheeting), leading to an enlarged window on the upper floor. Immediately after the original south-east bastion had been demolished, the thin partition behind it (Fig. 32) was replaced, as shown on the plan of 1756, by prolonging each curtain at full thickness. The length of the partition is shown (Fig. 32) as 6 ft. to either side of the corner, but must have been exaggerated, at any rate on the east side, where the upper part of the replacement consisted of brick and extended barely 3 ft. from the corner; the junction with the original east curtain was coigned with larger bricks, probably spares made for the mouldings in the spur. On the south side the continuation of the old curtain has been found to consist of jumbled stone and brick, apparently owing to still later repairs or
alterations, which extended beyond the probable length of the former partition, and incidentally destroyed all trace of the doorway marked in 1727. The remainder of the south wall - the original south curtain - seems to have been intact in 1756, apart perhaps from a footing shelf along the exterior; this continued past the corner along the addition to the east curtain, and is likely to have been applied to both walls simultaneously when the 'area' was levelled and paved. In 1954 a recess (fitted with fairly recent shelves) at the centre of the south wall - to be precise, 7 in. nearer the east end proved to cover part of the embrasure of a blocked doorway (now rebuilt to give access to the 'area'). The sides were splayed, leaving a clearance of 4 ft. 1 in. on the inward face but only 2 ft. 9 in. where they had met the original exterior; here the decayed wooden jambs still remained, overlaid by masonry added later to buttress the wall. The original wall had been 4 ft. 4 in. thick; the addition was 2 ft. thick and extended from the east end along almost the whole length of the curtain, up to approximately the level of the upper floor. Although the doorway had thereby been blocked, a window through the middle seems to have been kept open for a while, or intended to be kept open, since an arched niche in the added masonry had been exactly centred on the embrasure but was only 1 ft. deep, so that it stopped 6 in. short of the original external face. The alteration, or more probably change of plan, may be associated with the construction of a wooden staircase against the inner face; this rose across the embrasure and reached the upper floor at the south-east corner. While the sequence of these works is fairly clear, their chronology is only vaguely ascertainable. The doorway, which must be the oldest, was probably constructed late in the eighteenth century; it does not figure on the plan of 1756, and cannot be early, because no such opening through the original south curtain would have been permissible so long as that remained the external fortification. The next stage came when the two-foot thickening was substituted both for the narrower footing-shelf marked in 1756 and for a huge buttress, which then stood opposite the west rooms; the arched niche was obviously built simultaneously with the thickening, and its traditional seemliness suggests a date before 1872. The construction of the staircase followed, perhaps immediately. Finally, the embrasure was converted into a shelved recess, involving the building of a shallow arch, a feature unlikely to be as late as 1900. And certainly the thickening was applied before 1900, because its sloping top had required alteration to receive a roof of cemented corrugated iron, scraps of which remained visible across the east end of the 'area'. Under it stood a rubble structure, including a crudely arched fireplace and an oven, fitted with an iron door. Here, in fact, was the District Commissioner's kitchen in the late nineteenth century. It was enclosed by a screen-wall, containing a doorway and a barred window, some 20 ft. westward. The roof evidently served as a thoroughfare between an enlarged window on the upper floor of the east room and the late south curtain, through the inner parapet of which a gap had been cut, to be reached by a wooden stair. (This arrangement has since been imitated, utilizing the roof of a bathroom built on the site of the kitchen.) In the remainder of the 'area' no trace of any building can be seen, except 329
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that the outer curtain is rebated towards the west end, as though for a roof (Pl. 83b). The structure that existed underneath in 1756 may have been a washing
tank; it must have been destroyed when a corner was taken off the 'area' to build
the tunnel and landing which communicate with the spur courtyard.

2 Doorways in both side-walls of the gate passage are marked in 1727 close to the
eastern ends, whereas in 1756 and in actuality they are sited differently, near the
western end of the north wall and at the middle of the south wall. The northern
doorway is built of stone and had a wooden lintel; the southern was brick-lined,
and so must have been altered about 1750. The south wall was drawn in 1727 a
few feet southward of its actual position, but since it ran up to form the tower, that
must have been wrong unless the tower itself was afterwards rebuilt from the
ground up. Structural evidence almost proves that it cannot have been more than
partially reconstructed; in 1956 both side-walls were stripped of their whitewash
and clay plaster, and found to consist of irregular rubble laid in very poor mortar
work incompatible with any appreciably later date than 1707. Also, since the
tower was on the verge of collapse by 1750, it cannot have been recently
reconstructed.

The south doorway of the gate passage leads to a large room, described as an
'Apartement' on the plan of 1727, but as a 'Store' on that of 1756; though in fact
rectangular, the latter represents it with a slant across the south-west corner,
where it met the remains of the round tower. In 1956 a gun-port was unblocked in
the south wall, the original south curtain, in which a row of them is shown on the
view of 1727. On the outer side the edges must have collapsed before the port was
blocked, and their position could not be ascertained; the sides splayed inwards to
a width of 3 ft., the height within was 2 ft. 3 in., and the base stood 4 ft. above the
floor. (The aperture has now been enlarged to improve the ventilation and lighting
of the room.) The only window shown in 1727 is the small rectangular one which
still looks on the inner courtyard; the other, which looks on the spur, had been
pierced by 1756. A doorway into the room adjoining on the east is recorded by the
plan of 1727 and may remain hidden behind the limewash.

North of the gate passage is a small room, marked as a store in the plans of both
1727 and 1756. The former shows only one small window facing the inner
courtyard. The latter shows another, immediately opposite; this was afterwards
blocked by the construction of the existing lowest flight of the spur staircase, and
the whole recess was filled. When rediscovered in 1957, it was complete except
for the sill, which must have been some 3 ft. above ground; the brick arch rose to
approximately 7 ft. and was 3 ft. 6 in. wide. A narrower doorway of the same
height was unblocked in 1957 at the north end of the east wall, where the plan of
1756 marks a window; the width has now been increased to give more light. The
room is stone-paved, but had probably retained an earth floor until fairly recently,
because across it ran a causeway, 33 in. wide, composed of little slabs of stone set
on edge; it led straight from the doorway of the gate passage to another at the west
end of the north wall. This wall forms the back of the north bastion, and in its
thickness is a diminutive vaulted lobby, which affords barely space enough to turn
left and pass under a massive arch into the powder magazine, at the heart of the
bastion. The magazine is barrel-vaulted, and originally admitted neither light nor air unless the lobby doors were opened, when only a glimmer could have entered. (The existing rectangular window was probably pierced quite late in the nineteenth century; the iron bars across it are standard colonial prison fittings.) Both the lobby and the magazine were built between 1756 and 1806, at the same time as the bastion.

The upper floor of the west curtain was best reached by an outside staircase. As drawn in 1756, the landing at the top extended across the lower doorway to a pier beyond, obviously in order that the upper doorway might be superimposed upon the lower. An existing tall and low-silled window in this position may represent the upper doorway; the sides splay almost imperceptibly, increasing the width from 2 ft. 1o in. externally to only 3 ft. 3 in. within, though the wall is 3 ft. thick. The upper storey has suffered many alterations in the course of time. The westward face ceased to be needed for defence upon the construction of the later spur, and large windows were then pierced through the old curtain. Within the next fifty years the tower above collapsed or was demolished, and one of the internal partitions, which had run up to form its south wall, was eventually removed. Early in the present century the entire roof was taken off, when the wooden rest-house was built on top; its wooden floor has been replaced by a concrete roof, more or less at the original level. The parapet, of course, is modern.

Owing to the removal of one of the original partitions, the upper storey consists only of a small room at the north, occupied by the post office, and the long Council Hall. The north room was lit by two windows on the east (above the window and door on the ground floor); they are built of stone, and retained wooden lintels till recently, so that they may well be of early date, though in that case the one at the north-east corner must originally have been a doorway into an adjoining building which was demolished after 1749. On the north the room has always backed against a bastion, and on the west it has been overlapped by the late spur, except at the south-west corner. Here a doorway was pierced, and in order, no doubt, to provide more ventilation, was given the exceptional width of 4 ft. (splayed within to 4 ft. 5 in.). The segmental arch of brick probably dates from about 1749; the jambs consist of stone.

The present Council Hall can be identified with the 'Palaver Hall' of the nineteenth century; no room in the fort was spacious enough for that purpose till the destruction of the tower allowed two previous rooms to be combined. The area of the original intermediate room is lit on the east by the window which has apparently replaced the entrance from the outside stair, and on the west by a large window above the outer gateway. This and a similar window in the southern part of the wall (which is 4 ft. 9 in. thick) stood in brick-lined embrasures, respectively 5 ft. io in. and 5 ft. 9 in. wide, while the lights measured 3 ft. 7 in. and 3 ft. 9 in. Both may be dated about 175o-6, on account of the brickwork. A second window in the east wall also came on the south side of the former partition; with a light 3
ft. 8 in. wide, inside an embrasure of 4 ft. 9 in., it resembles the tall, narrow windows in the adjoining room behind the south curtain.

The Council Hall is now supplied with no less than three doorways, of which two may have remained unchanged from 1691-7; they connect with the room behind the east curtain and with the north room (the post office). The third, which opens at the south-west corner through the curved wall of the round tower, has been enlarged, probably during the nineteenth century; it was originally necessary because the room within the tower cannot have been accessible from anywhere else. Near the other end of the south wall a fireplace was unblocked in 1856, together with a shallow niche immediately to the right of it, with the base level with the top of the fireplace. The side and segmental arch of the niche consist of brick, while the fireplace also is covered with a segmental arch of brick and contains brick hobs a couple of feet high. But between the hobs and the sides of the fireplace stand piers, with flat tops at the level of the arch-spring about 4 ft. above the floor; these could have supported a wooden lintel before the arch was built. Both the piers and the hobs splay sharply outwards from the back of the hearth, and then return; the faces they present to the room splay slightly.

4 The bell hung inside an archway, the base of which is sunk 6 in. into the parapet, while the sides spring from rectangular pillars, with capitals fasciated by three successive overhanging courses of brick; the spring is rebated upon them so far that the span is actually wider than the lower part of the archway. The extrados is surrounded by a panel of masonry, from which it protrudes slightly, for emphasis, while the keystone protrudes more and also reaches higher, so that it meets the cornice, which is fasciated like the capitals and topped with a single rebated course. The length of the summit, however, is the same as at the level of the highest fascia of the capitals; the upper masonry is rebated so little as to make its edge flush with the middle fascia, and so overhang the outer sides of the pillars. The whole composition is unified by the extension of the pillars down the front of the parapet as pilasters, with stepped bases at the foot. The design is, in fact, infinitely more skilful than its execution, which is crudely irregular; for example, both capitals are bedded crooked, slanting downwards and outwards, and the slant is more noticeable in the north capital. An iron bar, from which the bell hung, is fixed between the capitals of the pillar. Some old inhabitants of Dixcove remember the bell in position, but say that it 'broke' during the later 1920s and was thrown away.

5 The foot of the north-west spur curtain is buttressed by a talus till near the north-west bastion, as indicated on the plan of 1756. From that point to the apex of the south-west bastion the wall mostly rises direct from the pavement, but probably overlies a continuous footing-shelf, represented in 1756 as beginning where the talus stops and running along the entire south side and around most of the south-east bastion. It now visibly begins at the apex of the south-west bastion and continues beyond the termination of 1756, as far as the junction of the late and early portions of the east curtain; since
the walls stand on uneven but always sloping ground, they required the support of this horizontal shelf with a sloping face. The width varies between one and two feet, according to whether the shelf is almost level with the ground or raised above a depression. The slope is steeper along the eastern half of the south side, and for that reason the bastions project abnormally little; the south intermediate bastion is actually only a half-bastion, while the south-east bastion is so slewed as to minimize disparities in level. Even so the ground falls considerably, and the apex of each bastion is therefore buttressed by a second, narrower, shelf placed under the continuous shelf; it does not appear on the plan of 1756, but may then have been concealed by earth. The combined height is about 6 ft., and the platform stands about 20 ft. 6 in. higher. There seems never to have been a shelf along the east curtain, where the ground does not begin to slope till a few yards away from the wall. A shelf, at one place supplemented by a second, covers the foot of the north-east bastion till near the apex, but there, as represented in 1756, stops abruptly; the termination was almost certainly covered by earth which has since been eroded. On the north of the bastion a vestigial shelf can be seen, perhaps a levelling course. A short stretch of the adjoining curtain is lined with a narrow shelf, which breaks off where the underlying rock approaches the surface; this section is omitted on Watson's plan of 1756, again perhaps because he could not see it. A similar narrow shelf, however, now surrounds the north bastion, which was rebuilt in its present form after 1756. Presumably it was the lack of a shelf, not so much around the bastion of his time as along the late portion of the east curtain and the adjoining flank of the south-east bastion, that inspired his recommendation for a 'foot wall' to retain masonry which stood too near the brink of the hillside. 6.

The gate passage and a room on either hand occupy the end of the spur, and from its corners run obliquely, and at variant angles, the two longer sides. These do not meet the old west curtain, but abut against the edges of the staircases which run up past them to the roof-platforms; in each case the junction is masked by a short stretch of wall which projects at an outward slant, intermediate between the axes of the spur sides and of the stairs. Here, and between each pair of rooms, stand twin pilasters, raised on a joint base but surmounted by individual capitals of two fasciae under a joint abacus, which gives the effect of a third fascia. The motive is repeated at half-height by a triple fasciated moulding which is recessed between each pair of pilasters, and appears again to either side of them, there forming the capitals of a shorter recessed pilaster attached to the side. These side capitals support the arch-moulding which outlines the frontage of each room, above the doorway and the pair of windows. The cornice rests upon the keystones of the arches and the abaci of the taller pilasters; its top widens backward and is cambered, forming a curb 30 in. wide and 15 in. high above the roof-platform. 7.

In 1756 the ventilator over the northern room was covered by a 'trap-door', but that over the southern is marked on the plan simply as a 'trap'; by 1806 a chimney-stack had been built over it, perhaps to make the room serviceable as a kitchen - it is conveniently traversed by the courtyard drain. In recent times both traps were protected from the rain by gabled stands of wood, louvred on every side; their
state of decay suggested a date in the last century. (They have now been replaced by copies.)

APAM: FORT PATIENCE
(P1. 87)

HE Dutch, who started to build this little fort in 1697, held it till 1782, when the garrison surrendered to the English; three years later, they regained possession by treaty. In 181 I the Akim, an inland tribe then engaged in war against the Ashanti, and consequently hostile to the Dutch, pillaged and wrecked the fort, throwing the guns over the walls. In 1868 the Dutch transferred the building to the English. Modern use as a police-station has kept the structure in good condition, but involved the filling of the backyard with sheds; a wooden post office, too, stands against the west wall of the backyard, on the site of a larger enclosure, the outline of which can no longer be traced (P1. 87b).

The fort occupies the gently rounded summit of a promontory which forms the end of a much higher ridge on the south-west. To the south and east an easy descent of a hundred yards leads to the shore, a sandy beach studded with rocks and exposed to the waves; a canoe or two can land here, but ships' cargoes must have been handled inside the bay on the north. The north side of the promontory itself drops steeply to the water, but a wide, unobstructed and sheltered beach lies at the foot of the ridge behind and stretches away north-west past a salt marsh. The town must have always been situated near this beach, on the lowest slopes of the ridge, and the track up to the fort necessarily passed through the streets. Consequently the use of the fort depended to an abnormal degree on the goodwill of the townspeople. They began by welcoming the establishment of a trading-post, and prospects seemed so encouraging that the Dutch hastened the building, but both parties soon regretted their enthusiasm. The local population indulged in 'frequent opposition', and the Dutch actually named the fort Lijdzaamheid, 'Patience', because of the annoyances they had suffered - and continued to suffer - from 'the deadness of trade' and from active obstruction. By 1704 (P1. 87a) the original 'house' had been strengthened with bastions (mounting eight cannon) at two diametrically opposite

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FIG. 38 Apam: Fort Patience. Upper plan, 79o-i

Guardroom
Inner gate
Sergeant's dwelling over powder magazine and small storeroom; next, the Assistant's dwelling Armourer's dwelling Entrance to slave-prison 18 ft. long Cistern
Hall over female slave-prison Large bedroom over a storeroom 9 Garrison's larder 1 over soldiers' io Small room f dwelling
x  Latrine - 'Night-houselet' 12 Stair to bell-house 13 Latrine - 'Entrance to droppings-box' 14 Small closet 15 'Orange Hall' over a storeroom 16 Bedroom over the granary 17 Smithy
18 Soldiers' kitchen 19 Kitchen for Commander

APAM: FORT PATIENCE
corners, and by a low outer line of defence, joined to the bastions but separated from the house by narrow open passages on three sides; on the north the walls converged to form a diminutive spur outside the entrance. As at Shama (and soon after at Beraku), the outer end of the spur was partitioned and covered over to make a tall guardroom, defensible from the roof (and therefore described by Bosman as a 'turret'). The partition, however, now forms the external wall of the fort, from which projects a terrace corresponding to the floor of the guardroom, and, edging it, a fragment of the eastern wall. In spite of this destruction, the whole scheme can be clearly visualized from a pair of engraved views, published in 1704 (P1. 87a), and from plans dated 1786 and 1790 (Fig. 38). The outer gateway is depicted with a curved gable on which stood three tall ornaments, and must have been built in brick; the inner gateway (2), now the entrance to the fort, is a simple brick arch. Between it and the 'house' lies an open court, tiny, but actually somewhat wider than it became at one stage. The original walls seem to have been scarcely higher than a man, but before 1786 two storeys of rooms were built against each; these have been demolished, and so the eastern wall is again exposed (standing to twice the original height), but on the west the inner wall of the rooms is preserved and forms the exterior of the fort.
The 'house', if the engravings can be trusted, bore a tiled roof with eaves, but except in that respect has never been appreciably altered. It is oblong, and two-storeyed. The ground floor is entered under an outdoor staircase, applied against the north wall; the rusticated lower doorway and the windows are round-arched in brick, and the remainder of the structure consists of stone. According to over-simplified information on a plan of 1786, the ground floor then contained storerooms and the powder magazine, while the commander lived upstairs; the reliable plan of 1790 shows (7-10) the ground floor divided into a storeroom, a slave-prison and soldiers' barrack, while the upper was mainly, not exclusively, devoted to the commander's purposes. Originally, no doubt, there had been no other building, and the allocation of rooms must have been changed when accommodation was provided in the spur and outside the former limits of the fort. The enclosed area was, in fact, roughly doubled by the addition of a yard at the back, reached by descending a stair from the old wall-walk. The west end of the yard was filled by a narrow building, which on the plan of 1786 is said to have contained only an 'Orange hall' (apparently the office) on the upper floor and the doctor's lodging below; in 1790 the interior was partitioned. A shed in the south-east portion of the yard held the smithy (i7) and kitchens for both the officers' table (i9) and the soldiers (18). A
much larger but empty yard, enclosed by a fence in 1704 and never strongly fortified, stretched along the west of the enlarged fort, from the north-west bastion to beyond the corner of the smaller yard.

The bastions, small as they are, deserve attention because they can be dated with unusual precision, within a year or two of 1700; strictly they are demi-bastions, because each exposes only the two long faces and one very short flank. The north-west bastion is solid, the southeastern hollow; it served as a slave-prison in 1786.

The parapets contain arched gun-ports, with the sill a foot above the platform, and slits for small-arms, opening level with the heads of the ports. A shelter fills the apex of each bastion, where the parapet is stepped up to elevate the roof.

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SEKONDI: FORT ORANGE

(Pl. 88a)

STRONG HOUSE’ which the Dutch maintained in 1682 must have been founded about 1670-5. By 1704 it had become 'a small fort called Orange' The fort remained Dutch till 1872, when it was transferred, in fairly good condition, to the British. A lighthouse now stands upon the south bastion, and many additions (largely in wood) provide a residence for the keeper and occasional accommodation for conferences of the lights service, with the result that the Dutch plan can scarcely be visualized. The long process of accretion has continued with such lack of thought that space has been wasted as well as gained; the better Dutch rooms are now (1957) so enveloped as to have become unusable. On one occasion, however, expert advice was sought and led to the installation of the fuelling system of the light inside the former powder magazine, so preventing yet another senseless and costly accretion.

The walls are generally stone-built, but in places are cut out of the rock to a height of several feet. The fort stands upon the east end of a ridge, which forms a level approach to the south corner and continues as a pathway along the south-east side; below this the ground first drops in a bank, and then shelves gently towards the open sea on the south and south-east, and towards Sekondi Bay and harbour on the north-east. An equally steep descent on the north-west leads into a valley, the far side of which was occupied by an English fort, within gun-shot of the Dutch, whose local allies aided them to make its existence hazardous.

An engraved view published in 1709 (Pl. 88a), and another based on a drawing of 1727, agree with a plan of about 1750 (Fig. 39), in showing a square enclosure, as at present, but entered on a different side, that facing the bay. The gateway interrupted a line of rooms backed against the north-east wall and opening on a courtyard, into which isolated rooms projected from the north-east and south-east walls, while behind it stood the only two-storeyed building. This - perhaps to be identified with the original 'strong house' - stretched across from the north-west almost to the south-east wall, leaving only a narrow passage whereby to get to a
service yard between the back and the south-west wall. The enclosure was sometimes flanked by bastions, which must have consisted entirely or largely of mud, so rapidly did they change.

In 1709 the only known bastion was at the north corner, but there might have been another at the south, concealed on the view. In 1727 only the west corner was out of the draughtsman's sight, and he represented the other three without bastions. But the plan of about 1750 marks bastions at the north and south corners. Before the next plans were drawn, in 1786 and 1791 (Fig-40), the

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FI. 40 Sekondi: Fort Orange. Upper plan, Feb. 1791

1 Gate of guard; bell-house above
2 Shelter
3 Inner gate of guardroom
4 Stair to hall
5 Hall over storeroom
6 Bedroom over Assistant's lodging
7 Another room over a storeroom
8 Balcony to bridge a gap
9 Cistern
10 Small larder i I Latrine
12 Under this bastion is a storeroom
(entered under the curtain at 13)
14 Powder magazine, and another behind it
Soldiers' lodging Sergeant's lodging Armourer's lodging Slave-prison and small prison behind Stair to battery Doctor's dwelling over Corporal's lodging Kitchen
Stair to kitchen from curtain Battery towards the English fort 18-lb. cannon 8-lb. cannon 8-lb. cannon

FORTS OF ABOUT 1700

present gateway had been opened through the south-east (seaward) wall. The old north-east entrance was blocked and its passage-way made uniform with the one-storeyed rooms beside it, and another short row of rooms was built in continuation, at right angles, with the new entrance in the middle. The north and
south bastions were rebuilt on a larger scale, respectively solid and hollow; another bastion was added at the west corner, and the north-west curtain-wall was replaced by a wide battery, the exterior of which rose from lower down the slope; its guns were aimed against the English fort. Presumably at the same date, or somewhat later, two rooms were reconstructed to carry an upper floor adjoining the battery, on either side of the two-storeyed building. The internal divisions of that building are recorded only on the plan of 1791, when the upper floor comprised the commander's bedroom, the hall and another room, and below each was a storeroom. A landing crossed to the wall-walk, above the service yard. A larger enclosure outside the south-west wall was probably unfortified; it can no longer be traced. At some date after 1791 - probably soon after - a round equivalent to a bastion was added at the east corner; it remains in good condition.

BERAKU FORT GOOD HOPE (Pls 88b-90)

THOUGH a long stretch of precipitous coast offers no other good landing-place, the country inland is so unproductive that Europeans were slow to settle at Senya Beraku. In 1695 the English planned to build a fort there, arming it with guns from Fort Royal (a demilitarized outpost of Cape Coast), and to 'put in it eighteen Christians of high and low degree'. The project lapsed, only to be fulfilled without much delay by the Dutch. Fort Goede Hoop ('Good Hope'), as they called it, remained Dutch from its foundation in 1705 or 1706 till 1782, when the weak garrison surrendered to the English. In 1785 the Dutch regained possession by treaty, and they maintained the buildings very well for the next twenty years; an official report of 1804 declares it 'one of the finest and most spacious forts on the Coast'. However, a Dutch officer of 1802-4, who loved picturesque phrases, wrote that Fort Good Hope was beyond hope, and it was soon abandoned. The British obtained possession in 1868 and made the site usable by clearance; stone must also have been taken away for building material. Consequently most of the internal walls and parts of the fortifications have been either reduced in height or demolished. The only British additions are the wooden rest-house behind the south curtain-wall (on top of the Dutch one-storeyed rooms and entrance), and a crudely reconstructed room on the west. The fort occupies the north half of a promontory, level with the great plateau on the west, but a valley develops beside the west wall and leads with increasing steepness below the north side to a cove where there is a good landing-beach; the east wall stands above a rapid descent to sheer cliffs (Pl. 89).

The Dutch must have intended from the start that the fort should eventually be made roughly square, with a bastion on each corner, but as a preliminary they built it triangular, with three bastions, so that it covered slightly more than half the final area, cut diagonally. The fort in that shape is represented on an undated plan (Fig. 41), which was
FORTS OF ABOUT 1700

sent to Holland with papers of 1706-7. Although drawn before the structure was completed, and possibly before it had even been begun, the plan cannot be far wrong in outline, considering the shape of the ground. Bastions are shown at the south-west, south-east and northeast corners, and a long diagonal curtain-wall between the last two. A site behind the south curtain was reserved for 'the House', designed to be sixty-two feet long but little more than twelve feet wide internally; this building seems to have been preserved without much (if any)

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FIG. 4 Beraku: Fort Good Hope. Plan, r706-7
alteration. Through it runs the entrance passage, but in the original scheme gateways were placed on the two other sides of the triangle. When, at some unknown date, the fort was extended and made square, the essential work involved might, one would suppose, have been limited to building north and west curtains with a bastion at their junction, and then to removing the diagonal wall - which, no doubt, had been constructed with a view to easy demolition, using stone laid in mud, or nothing but mud. But the dimensions of the early plan are irreconcilable

BERAKU: FORT GOOD HOPE

with the curtains and bastions of today; probably none of the original work was built to last.

The next piece of evidence is an undated view (Pl. 88b) of the south frontage, drawn after the fort had become square (because a long tall building in the background is obviously that placed against the north curtain, Fig. 42.Jo), but before the addition of an outer wall which enclosed the entire fort by 1786. The south-west bastion is shown with two arched gun-ports, the south-eastern with three, whereas the project plan makes the latter appreciably the shorter; a spur of the normal blunted-triangle design was enclosed by two walls of roughly man-height attached to the flanks of these bastions. By 1786, the south-east bastion had no flank and the other's was not long enough. By that date, however, the spur had been demolished, and a new salient on its site formed an integral part of the new outer wall; the end was wider, and contained a guardroom behind the gateway (following the precedents at Shama and Apam). No remains of the outer wall can now be seen along this side of the fort, but two plans, one ascribed to 1786 and the other dated 1790 (Fig. 42), agree so closely that their evidence must be reliable. The sides of the salient differed in length, obviously to match the
bastions, which had already been rebuilt in their present shapes, and are remarkably unlike each other; that on the south-west is composed with very obtuse angles, while the southeastern is an acute demi-bastion, slewed so that the apex points southward; one of the faces covers the site of an original flank and overlaps the previous beginning of the south curtain.

The outer wall must have been added after the older fortifications had been given their final Dutch form, not only on this side but also around the entire perimeter; the wall bends in and out in conformity with every major change of direction, keeping at a distance of some ten or twelve feet; the interval, where the local population would take refuge in time of war, was paved (at any rate in some places). The height, where preserved to the coping, is about seven feet. Slits for small-arms are very numerous, and there were also a few gun-ports; in 1804 the opening of three or four more was recommended.

Since the Dutch apparently made no subsequent changes, the age of the existing fortifications may appropriately be guessed at this point. The south curtain should be original work of 1706-7, but has been shortened. The east curtain (of which only half remains) and the small north-east bastion (Pl. 89) may belong to the same period; the dimensions, however, do not correspond with the project plan. The north and west curtains and the north-west demi-bastion were first constructed when the fort became square instead of triangular, and the round-arched gun-ports, with sills a foot high, suggest that the bastion, at any rate, has never been altered; all things considered, some such time as 1710-20 seems most likely. Around 1750, the south-west and southeast bastions were rebuilt. The outer wall must be later, though completed before 1786.

One anomalous feature is the interruption of the east curtain by a rectangular projection, described on the plan of 1790 (Fig. 42.8) as 'a sort of balcony' As in the case of a solid 'balcony' at Princetown, the purpose of the salient may have been social rather than military; officers must have found it useful for taking the air after they had eaten in the hall immediately behind. The curtain southwards has suffered from British alterations; the nearest stretch was converted into a ramp
some fifty years ago, and the remainder, as far as the south-east bastion, was replaced inwards of its original course. The bastion itself has been reduced in height, leaving one portion several feet taller than the rest; the interior served in 1786 as a prison for slaves awaiting shipment, but as a maize-store in 1790. The south-west bastion contained another slave-prison - for men, at any rate in 1790, when the women were kept in the north-west bastion. The safe situation of the north-east bastion qualified it for the powder magazine. The shelters on the apex of both north-west (Pl. 9oa) and north-east bastions already existed by 1786, and no others are known at any date.

The courtyard was unusually spacious; underneath lies a cistern (still in use). The south and west sides were lined with one-storeyed rooms, the north and east with two-storeyed buildings. Of them all, the only survivor is the south range, the 'house' projected in 1707; the room west of the entrance formed the sergeant's lodging in 1786, the corporal's in 1790, while the assistant occupied the east room throughout. The inner arch of the entrance passage is brick-built, projecting from the face of the wall, and rests upon capitals consisting of three receding courses of brick. Their resemblance to English work of 1749 at Dixcove might suggest replacement, but the masonry around shows no sign of disturbance. The nearest part of the west range was rebuilt, very poorly, half a century ago. The two-storeyed buildings are now represented only by the partially ruined storerooms on their ground floors. In the north-east corner of the courtyard a staircase remains almost intact except for the parapet. It led to a 'small hall' or 'Orange hall' beside the northern wall-walk, and to 'the hall' beside the eastern (Fig. 42.10.7); the former seems to have been the administrative office, while in the latter the commander dined with his principal subordinates.

PART SIX
FORTS OF THE LATE EIGHTEENTH CENTURY

ANOMABU: THE SECOND FORT
(Pls 91-94)

The great English second fort at Anomabu, begun in 1753 and completed (or virtually completed) in 1770, was the last to be built on such a scale. Its defences conformed in plan with the long-established practice of the Coast, but the low parapet of the bastions, and the open embrasures for the guns, were features unusual there, though habitual in Europe, and in the event proved unsuitable for African warfare.

Internally the design was obviously influenced by that of Cape Coast Castle, though the opportunity was taken to rationalize the scheme an impossibility with an old foundation altered by successive generations. There was nothing unconsidered or makeshift at Anomabu, and no other fort demonstrates so clearly what type of accommodation was thought appropriate for the various classes of occupant; nowhere else, either, does the original structure of a fort include a large prison specifically built to hold slaves awaiting transport overseas.
Thanks to exceptionally easy communications with the interior, Anomabu became a favourite trading-port upon the collapse of the Portuguese monopoly, and all the European nations competed for the right to maintain a post there. A Dutch 'lodge', founded about 1640, was captured in turn by the Swedes, the Danes, the Dutch again and the English, all within some twenty years; the defences and inner buildings seem to have consisted of mud. Shortly before 1680 the English completed a small triangular fort, Fort Charles, of durable materials, but they abandoned it after a troubled half-century. In 1750 the Committee in London asked Government approval for building a new and larger fort, which should incorporate the usable remains of Fort Charles, and during the next year five ships went out laden, for the purpose, with bricks and lime. The French, too, were proposing to build a fort at Anomabu when, in 1753, they were frustrated by the arrival of John Apperley, an engineer whose design had been accepted in London, and who was sent out to execute it. He did not, in fact, complete the buildings, but his specifications appear to have been followed in the later

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FORTS OF THE LATE EIGHTEENTH CENTURY

phases of construction, except perhaps for the hall, so that he may be considered almost entirely responsible for the existing fort (which bore no name, though it is currently known as Fort William). His own reports show that he did not carry out the provisional scheme of restoring and extending Fort Charles, but built entirely anew; only the inland extremity of his fort overlapped the previous site. The foundation was laid in August 1753. Not enough materials had been sent from England, and work was delayed by many other difficulties, but most of all by the shortage of skilled artisans, especially bricklayers. Instead of being completed within two years, as Apperley's ignorance of local conditions had led him to expect, the initial project may, with luck, have taken slightly less than four. The stage reached by March 1756 is recorded by Justly Watson's plans (Fig. 43, cf. Fig. i) and sections. No curtain or bastion had yet received its parapet, and two bastions had still to be levelled off by raising some parts as much as two or three feet. None of the four inner buildings had been completed. Though the vaulted rooms on the south were standing, their roof platform had not been levelled, the largest building had been brought up to the middle of the second storey, and the site for the other two buildings, as well as most of the courtyard, remained an uneven mass of rock. A second programme of work upon the defences was completed in 1761; it must have been restricted to the top, and perhaps to the extension of the wall-walk over arches. The latest known work, the hall, dates from 1770.

The fort stands upon the seaward end of an eroded shelf of hard rock, which begins some five hundred yards inland, at the foot of low hills, and slopes gently down into the water, forming a reef. A large sandy beach is indented behind the rocks west of the fort, and makes a fairly sheltered landing-place (Pl. 94a); canoes can also be brought ashore on the steep and exposed beach to the south (Pl. 92b). The more important section of the twin town seems to have been
sитuated west of the fort, which was given a large gateway in that direction (P1. 91); a small gateway faced the better landing-place (P1. 94a).
Imported bricks, baked to a dull crimson and very hard, compose the entire facing of the fortifications, behind the whitewashed plaster, and when, some years ago, a hole was pierced through the west curtain (to insert a pipe), solid brickwork was encountered throughout; the other curtains also are solid according to Watson's plan. The inner buildings and the pavements consist of stone, with much brick vaulting and coigning. The curtains slope inwards almost as steeply as the bastions; only the parapets and the facade of the main gate stand upright. The parapets are four feet high; they contain slits for small-arm fire at intervals of a few feet (P1. 93b).

AFRICAN TOWN

Apperley had wished to make the fort perfectly regular in outline, but found himself obliged to restrict the size of the north-west bastion in order to avoid an African house, which had been used for burial. He would, too, have preferred to build nearer to the sea, but was unable to obtain permission to encroach upon some sacred rocks, which rose from the exposed beach on the south; moreover, the townspeople valued this beach as a thoroughfare. These enforced restrictions did not, however, greatly weaken the design, which was obviously calculated to allow the maximum fire-power to bear upon ships at sea, and secondly upon the all-weather landing-beach. Hence only the bastions towards the sea were solid, and the intervening curtain was extended inwards by a battery, formed by the vaulted roof over three rooms. The walk upon the other curtains is widened merely by resting upon a series of piers and arches (not yet joined up on Watson's plan; the present outline is drawn on Fig. i). These are separated by a narrow passage from the two-storeyed building west of the court, but on the east a similar gap beside the main building is covered by the pavement of the walk, except where ventilating shafts opened beneath louvred hatches, to give a modicum of air and light to the slaves imprisoned below. A fine winding staircase (P1. 92a) occupies a site clearly reserved for it in Watson's plan, between the seaward end of the hall and the south-east bastion, and allows unusually easy communication between the courtyard and the wall-walks. On the north wall a bell hung in an arch between a pair of squat pillars, with brick mouldings and pyramidal tops on which sit cannon-balls (P1. 93a).
The main building alone is three-storeyed, but the third may have been an afterthought and was not completed till 1770, when the second may already have been in use for thirteen years. The ground floor consists of vaulted rooms, on either side of the passage to the east gateway; their arched doorways and windows
are set back from the courtyard in the shade of an arcade composed of round and segmental arches, not quite in precise alternation (PIs 92a, 93b). These support a continuous balcony, with a parapet (added after Watson's time) which contains lancet openings and probably is the oldest of many such in the fort; the inward side of the wall-walks and the stairs are safeguarded in this manner. Off the balcony open the doors and windows (mostly arched) of the first-floor rooms. A passage at the centre leads back to the slaveprison, a string of tall vaults so narrow that they are almost partitioned by the piers which run inwards from the curtain; dismal as the place is, with its rock floor and high, dark walls, it at least has the merit of maintaining a constant moderate temperature. Most of the top floor is occupied by a hall, but the north end seems always to have been parti-

ANOMABU: THE SECOND FORT

tioned off, probably into two rooms of the full width. About half a century ago, a new roof was laid over these rooms, at a considerably lower level than the roof of the hall, and the height of the walls must also have been reduced, by how much we cannot tell. Whether the whole building had ever been actually of uniform height and covered by a single roof may be doubted, but that had certainly been the intention, to judge from the design of the hall (PIs 92a, 93b, 94a). It bears an emphatic cornice of four overlapping brick courses, separated by a plain band from a triple moulding of the same type several feet below; at the seaward corner a projecting panel terminates all three features. This device of a double panelled cornice was much favoured in contemporary England, where the panels (adapted from the Roman triglyph) were placed not only at the ends of a façade but also at intervals along it, usually above a column or pilaster. There is one other panel facing the courtyard, above the space between the third and fourth windows of the hall, and surely the design called for a couple more to be spaced along the rest of the façade, and one to form a termination at its north end. But the division of the roof crudely cuts short both mouldings above the fifth window. (In 1955, when the building was again re-roofed at two distinct levels, the lower moulding alone was continued to the north end, and the cornice was brought downwards at the junction; this compromise, adopted merely for seemliness, is unlikely to be true to the original appearance, whatever that may have been.) The building on the west side of the court, though of equal length and generally similar, was markedly inferior to the east building. The structure was poor throughout, and had become ruinous by 1953 (Pl. 94b), when a complete restoration was put in hand. The outer walls were reasonably thick, the partitions extraordinarily thin, even if full allowance be made for the fact that no room was vaulted; a wooden floor even covered the passage towards the main gateway (ending outside the vault that tunnels through the curtain). The rooms on both floors could have been supplied with windows on either side, owing to the existence of a passage between the back wall and the curtain, but possibly that space was reserved for a slave-prison; at any rate the opportunity was not taken. The upper rooms must have been uncomfortably hot, being floored with wood and overlaid by an almost flat roof (which may, at best, have been coated with a
few inches of tarras, the waterproof cement of the time). The projected design, as
sketched on the plan of 1756, seems to have been followed almost exactly - an
indication that construction cannot have been long delayed. The same may
perhaps be said of the one-storeyed building across the north of the

FORTS OF THE LATE EIGHTEENTH CENTURY

court (Pls 93b, 94b), though indeed there is no certainty that it actually met the
west building, as the project plan required (Fig. 43). The corner space, which was
apparently envisaged as a room, is now an open platform (level with the floor of
the existing, abbreviated, north building) and serves as a thoroughfare. Its most
valuable function is to give access to an external staircase on the end of the west
building, and that requirement must surely have been foreseen by 1756, because
no alternative and equally convenient means of reaching the first-floor balcony
could easily have been contrived. A stair also leads by a bridge from the roof of
the north building to the balcony of the east building.

In 1789 the Governor's Council decided to 'build a small spur of lime and stone,
one foot thick, in the place where the present Company's slave town is built, and
let small rooms be erected in the manner of Winneba spur' - which (as last
represented, thirty-three years earlier) had taken the form of an almost equilateral
triangle with a few one-storeyed rooms attached to the side walls (Fig. 3.5). The
main purpose of the Winneba spur had evidently been defensive, though not so
much to safeguard the fort as to provide a refuge for the townspeople in case of
invasion; the motive at Anomabu was simply to re-house the slaves in a manner
which would save them from further molestation by the townspeople. The
Council Minutes contain no hint that any military considerations arose, though the
site chosen for this exceptionally weak spur must have been just outside the west
or main gate.

A few years later, the west gateway constituted a recognized danger to the fort.
Although no wider than the entrances of most other forts, it offered unusual
opportunities to an enemy and would have been hopelessly vulnerable to even the
lightest of cannon. In contrast to the narrower east gate, which opens on to rocks
and sea, this gate faces a long stretch of flat ground occupied by the town, and the
mud houses would have given cover to an attack at short range. Eventually,
therefore, the gateway was walled up, at some unknown date before 1820, and it
was not reopened till 1954. A less drastic solution had been proposed but rejected,
probably because it would have involved a permanent increase in the garrison as
well as a large immediate outlay; the design was submitted to London, where it is
still preserved in a roll of drawings which bear dates ranging from 1787 to 1796;
it cannot be earlier than 1790, if it was an alternative to the spur, and is unlikely to
be appreciably later than 1800. The scheme provided for restricting the approach
by an independent 'hornwork', a type of outwork prevalent in Europe but not
represented on the Coast, in the form of an elongated miniature fort prolonged by
corners resembling half-bastions. This would have stood parallel with the west
curtain and have terminated close to the
ANOMABU: THE SECOND FORT

bastions at either end, leaving only a pair of narrow and twisting passages by which to reach the gate.

The motive for such extraordinary precautions can be seen in the growing power of the Ashanti, and the final blocking of the gateway should perhaps be associated with the great invasion of 1807. On that occasion the local population took refuge in the fort, and when the commander refused to surrender them, the Ashantis besieged it with the utmost determination. The fort had been exceptionally well supplied with cannon, on iron carriages; as early as 1779 it had possessed no less than eight twenty-pounders, the only guns of such size on the Coast. But the low parapet and open embrasures did not effectively protect the gunners from musket-fire, and the garrison (of five officers and twenty men) barely succeeded in defending the walls, relying mainly on their small-arms.

In 1821 the fort was still armed with forty-nine cannon, ranging from three- to twenty-four-pounders, but no less than fourteen (of all weights) lacked carriages; most of these guns, probably, now lie more or less buried in the sand below the south curtain (P1. 92b).

A very large house, near the north-west corner of the fort, is said to have been built by Brodie Cruikshank some twenty years later, and afterwards to have belonged to the Aggrey family. In obvious imitation of the fort, arches in the courtyard support a balcony which retains a pavement of alternate black and white marble tiles, such as till recently paved a balcony at Cape Coast Castle, and can still be seen in old houses at Elmina. The fort may have been similarly embellished.

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BEYIN: FORT APOLLONIA

(Pls 95-96a)

The most ingenious and truly original design in tropical Africa was applied to the latest of the small forts, that built by the English in 1768-73 at Beyin, which they called Apollonia - a name conferred by the Portuguese discoverer, who sighted the place on that Saint's day.1

A wide sand-spit runs west-north-west from the mouth of the Ankobra river, near Axim, towards the present frontier of the Ivory Coast, and is cut off from the mainland by interminable swamps till it reaches Beyin, where a flat expanse of solid ground meets the beach. The ruined fort stands partially enveloped by blown sand, which slopes from it to the shallow sea.

Inland, a path led to the great bend of the river Tano, upon which canoes could traffic with the interior, but the abundant timber of the coastal district was the main attraction to Europeans. The English had maintained a trading and protective alliance with the inhabitants for thirty years or more before 1765, when a Captain Charles Tennant submitted (from Dublin) utterly unpractical designs for a blockhouse and storeroom, to be constructed of wood.
and enclosed by an elaborate faced earthwork. But in the same year an ad hoc Government grant of £7,000 enabled a permanent building to be undertaken. In 1766 rocks were being blasted on the shore, six miles westward, to obtain material for the fort; it consists, unlike any other on the Coast, almost wholly of limestone.

The building was begun in 1768 and completed late in 1770, except for the spur outwork, which was started about a year later and completed (at the latest) early in 1773. Records of expenditure from 1769 to 1775 show a total of £2,509. 4s. 8d., of which £2,381 was spread fairly evenly over the first four years, £81-odd were spent in 1773, and negligible sums in the last two years. The number of slaves on the establishment supplies another guide to the progress of the work; it dropped from a steady twenty-eight in 1768-70 to eighteen in 1771, fifteen in 1772 and ten in 1773 - by which time their chief duty may have been to cut and ship wood.

The condition of the fort was reported as good in 1774 but 'very indifferent' two years later; unspecified repairs were being carried out in 1778. Perhaps it was not till then, or even later, that buildings filled every possible site within the fort proper, or perhaps there was an unrealized scheme to add rooms in the spur; at any rate, some Liverpool merchants commented in 1777 that the buildings are not now complete, yet they are sufficient to accommodate a larger garrison than the trade requires to be kept there. The establishment had been fixed, a few years previously, at no more than one officer, a sergeant, a gunner and six soldiers. Their combined salaries and pay amounted to £334 a year, and the upkeep of the fort cannot have cost much, timber for repairs being available almost on the spot.

The economic situation worsened with the abolition of the slavetrade, and the English abandoned the fort shortly before 1820. They seem to have reoccupied it briefly, and again withdrew in 1828. The ruins were apparently put into usable condition by the Dutch, when they took over the British rights (by agreement) from 1868 to 1872, but a year or so later much damage was inflicted when a British gunboat bombarded Beyin, which had become an ally of Ashanti. However, the fort is said to have remained more or less entire till about thirty years ago, when a good deal of the stone was re-used to build the Chief's house.

The fort is singularly irregular in plan (Fig. 44). The curtains are actually laid out in a square, but only two of them run to the same length, and every bastion is differently shaped. The west bastion was almost equal in strength to all the other defences. Its disproportionate size, the greater thickness of its masonry, and the hollow (originally, no doubt, sand-filled) apex, made it adequate to the deliberately exposed position; the southern face runs parallel with the coast, and would inevitably have taken the largest share in defending the fort against attack by sea. Nine guns were mounted on this bastion, compared with an average of five on the remainder. Next in importance, and therefore in size, was the southern bastion, the faces of which gave views of the sea to either side, but each presented such a slanting target to any near-by ship that the walls did not require to be very
thick. The two smallest bastions are much alike in size but not in shape, because in both one flank had to command a face of the other small bastion, and the second a face of a large bastion. The parapets of the bastions also were individually designed; the best preserved, that of the west bastion, is in many places intersected by embrasures open almost down to the platform, but

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FiG. 44 Beyin: Fort Apollonia. Plan, i956-60

BEYIN: FORT APOLLONIA
elsewhere contains arched gun-ports; slits for small-arm fire are placed higher up. The same care for detail appears in the vaulted rooms inside the bastions; all are different, and those in the north and south bastions provided for small-arm fire in well chosen directions.
The stone-paved platforms of the bastion were approximately level with the upper floor of two-storeyed buildings which stood behind them and joined others along the curtains; the outer walls of the latter actually constitute the curtains, except along part of the north-west side which was backed by an open-fronted arch. There were large rectangular windows in the upper portion of the curtains, and the flat roofs must have been edged externally with a defensive parapet.
The fort was entered through a spur2 with walls as high as the parapets of the bastions, and then through a plain archway (P1. 96a). A vaulted passage leads inwards, between a pair of (presumably) guardrooms. Other rooms stood above them, and met the equally tall buildings on either side, at the corners of an irregularly shaped court. On the right the two storeys of rooms stretch to the north-west curtain and the back of the north bastion, but on the left they were cut short by the west bastion, to which a fine staircase ascends, turning round the corner. The brick parapet of the stair was lightened, as usual, by lancet openings. It continues (P1. 95a) along the inward edge of the bastion, and beyond, along the flat top of the arch behind the north-west curtain, to the upper room behind the north bastion. This room may confidently be identified as the hall, not merely because it was the largest in the fort, but also because the width of the arch implies that quite a number of reputable persons would regularly come in or go out in company. The hall was well ventilated by at least two doors (for there must have been one to the bastion) and by windows, both towards the court and
through the curtain. The doorways and windows throughout the fort are rectangular, and covered with flat arches of brick. The best-preserved (P1. 95b) stand in the south corner, above the entrance to the bastion, and composed practically the entire back wall of the room; a gun-port and a small-arms slit in the bastion parapet can be seen in the background of the photograph.

1 The name 'Cape Apollonia', often found in the early literature, originated because rising ground on a perfectly straight piece of coastline was mistaken for a promontory.

2 The side-walls of the spur are built into the bastions, and the beginning of the northern wall stands there complete to the original height, that of the bastion parapet. Elsewhere, demolition (to obtain building material) has left only isolated scraps of wall at most a few feet high, and in the intervening gaps not even foundations can be seen. An intelligible plan can, however, be restored on paper, simply by prolonging each existing broken end till it meets the next. The north wall evidently conformed with a traditional pattern in that its outward extremity overlapped the remainder, the exterior of which could accordingly be

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subjected to small-arms fire from the bend. But in the corresponding position on the south the extremity seems to have been overlapped, making a large re-entrant, to which no precise analogy can be cited in Africa. But the principle was the same as in an outwork, since destroyed, at Christiansborg (P1. 43), if we may assume that the outer gateway was placed in the re-entrant, where it would have been commanded more effectively than if it had opened, as usual, through the end of the spur. No traces of inner buildings have been noticed, apart from the vaulted cistern - the only one known in the fort.

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KETA: FORT PRINSENSTEN

(P1. 96b)

S.HE last big fort to be built on the Coast was at Keta. Architecturally it conforms throughout to the traditional pattern. But the circumstances that gave rise to it were anomalous; unlike every other fort, it was founded against the wishes of the townspeople, who preferred to trade with all comers and therefore had consistently refused to let Europeans establish a stronghold which might dominate their territory. They had, however, allowed the Danes (and for some short while the Dutch) to live there in an innocuous manner; the Danish 'lodge' at its last and best stage (P1. 4b) was a timber-frame house in a courtyard, which was enclosed by a very low wall with bastioned corners. But in June 1784 the Danes ended a victorious campaign against the neighbouring Anlo by occupying Keta, which had ostensibly been neutral, and imposed terms of peace whereby they obtained the right to build and maintain a proper fort. This was begun immediately, by enclosing the existing 'lodge' within much larger and taller stone curtain-walls and bastions. Since the local rock was unsuitable for permanent building, all the stone
required was shipped from Accra; the lime for mortar was obtained on the spot by burning shells. Isert, an officer in the expeditionary force, describes how, on the Governor's order, he himself demarcated the layout, a slightly enlarged copy of a fort which the Danes were already building at Ada, the dimensions of which are recorded as about two hundred and eighty by two hundred and sixty-eight feet; this one was about six feet three inches bigger. The fort at Ada had been given the name of Kongensten, 'Kingstone'; this was named Prinsensten, 'Princestone'. The new fortifications must have been completed without delay, but the substitution of stone buildings for the L-shaped house within could safely be postponed, and was effected by leisurely stages. A plan of about 1802 (Fig. 45) shows the east side in the final form, describing the towerroom above the entrance (i) just as it looked half a century later (Figs 46, 47), and the two-storeyed north block (3 and 4) was already complete. But on the opposite side of the courtyard, the site for the similar block remained vacant, though demarcated (either by the foundation of the projected wall or possibly by a remnant of the lodge). Between the double staircase (5) and a battery that faced the town, stretched the roof of a storeroom (6), upon which the commander's lodging was added within the next couple of years. From contemporary drawings it is known that the fort was lavishly equipped for small-arm fire along the curtains and bastions; there were eight slits for that purpose on every bastion face, interspersed among three arched gun-ports or, less frequently, open embrasures.

The Danes encountered less local hostility as danger from other African peoples became acute. This, in 1802, justified an armament of thirty-three guns (up to twelve-pounders) and an establishment uneconomic, now that the Danes had abandoned the slave-trade - of a commander (whose duties were primarily commercial), a lieutenant, a surgeon, a non-commissioned officer, ten mulatto soldiers and fifty slaves. And, approximately at the same date, a low outer wall was built all round the fort, obviously to make a refuge for the townspeople; they were expected to defend it with small-arms, for which purpose some forty openings were provided in the curve around each bastion, and many on the straight portions parallel to the

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FIG. 45 Keta: Fort Prinsensten. Ground plan, c. 802
I Guardroom; there is a handsome octagonal room above a sitting-room and bedrooms
2 Sergeant's and soldiers’ barracks
3 Storerooms „, under a sitting-room and bedrooms
4 Kitchen J
5 Stair to battery 6 Large storeroom
7 Vaulted powder magazine

KETA: FORT PRINSENSTEN

FIG. 46 Keta: Fort Prinsensten from south-east, 1847
commander (whose duties were primarily commercial), a lieutenant, a surgeon, a non-commissioned officer, ten mulatto soldiers and fifty slaves. And, approximately at the same date, a low outer wall was built all round the fort, obviously to make a refuge for the townspeople; they were expected to defend it with small-arms, for which purpose some forty openings were provided in the curve around each bastion, and many on the straight portions parallel to the
curtains. The whole outwork was demolished in or before 1847, but the foundations can be recognized on a drawing of that year (Fig. 46). By about 1840, the fort was not much better than a ruin - the wall facing the sea actually collapsed - and the number of occupants diminished till eventually a sergeant was left in command. The rehabilitation of the fort was not undertaken till the close of 1846, when Lieutenant Svedstrup was sent to take charge, with sixteen African soldiers (Osu men from Christiansborg) and twenty labourers. The 363

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restoration must have been virtually complete by June 1847, when a dispute with the townspeople, over the wages they received for carrying the building material, developed into a riot - in which Svedstrup lost several of his soldiers - and then into a siege, which lasted until October. A plan by Svedstrup, dated August 5th, 1847 (Fig. 47), and the copy of a drawing by him (Fig. 46), show that his restoration had involved drastic alterations, to suit a small garrison with a correspondingly reduced but effective armament, a new set of eight guns; consequently he was able to hold out till ships brought reinforcements. The fort was again besieged by the Awuna in 1878, but the occupants were then the British, who in 1850 had purchased all the Danish possessions in the Gold Coast. They seem to have left the fort practically unchanged, except by decay, till 1933. After that date, they placed a series of concrete buildings in and around the fort, transforming its appearance. The fortifications remain virtually intact except that the parapet has been cut down throughout to three and a half feet, the level to which Svedstrup seems to have reduced it on the east side alone; consequently all the arched gun-ports have been converted to open embrasures (which splay from three feet two inches to three feet seven inches wide; the parapet is one foot three inches thick). The small buildings which stood upon the defences have perished. Within, most of the ground floor has been preserved, with minor alterations, but only the latest of the three two-storeyed buildings retains its upper floor; in one case Svedstrup was responsible for the demolition. The Danish structure, so far as it has been investigated beneath the whitewash and plaster, consists almost entirely of rubble, which, however, is known to compose only the facings to a fill of sand, even in the curtains, which are six feet thick overall. The curtains are upright, and so is the parapet throughout; where it runs above the sloping bastions it is rebated some three inches behind an upright strip some four inches high. The platform, of curtains and bastions alike, stands at a height of fourteen feet six inches above a footing shelf, which projects four inches forward. Keta stands between the sea and a huge lagoon, on a reef of soft rock (joined northward by a sandbar to the present frontier of Togoland). Prinsensten was laid out on the broadest part, at a distance of about three hundred paces from the sea and probably twice as far from the lagoon; both shore-lines have since changed repeatedly. 2The landward curtains are longer than either the seaward or the lagoon side; the four bastions are almost identical, with faces of roughly forty feet. The sole entrance 3 faced east (to be precise, east-south-east), towards the
sea; a spur which covered the approach in 1847 has since been destroyed to make way for a road. The gateway is a segmented arch, four feet ten 364

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FIG. 47 Keta: Fort Prinsensten.
i Path to the beach
2 Gate of paling
3 Outwork protecting the gate
4 The Gate
5 Building over the gate from which you get a wide view on all sides
6 Beneath the curtain are two spacious barrack rooms
7 Stair from Courtyard to batteries
8 Building containing four spacious rooms, over four barrack rooms
9 Beneath the bastion is a vaulted storehouse (powder magazine) io Small yard for cattle
* N.

Cistern
Upper plan, Aug. 1817
i i Beneath is a vault through which you go from the Court to the yard (io)
12 Beneath the curtain and the building (13) are four storehouses
13 Building containing two rooms 14 Wash-house 15 Bell-turret 16 Watch house
17 Latrine
18 Kitchen
19 Main way up from Court to batteries 20 Flagstaff
2 1 Garden in which are some graves

FORTS OF THE LATE EIGHTEENTH CENTURY
inches wide and nearly twice as high; the pilasters that enframed it are no longer visible through the plaster, but the series of eight horizontal mouldings which seemed to rest upon them has been preserved by coatings of tar (Pl. 96b). This purely ornamental feature (of Italian inspiration) runs to a length of nearly thirteen feet, splaying at either end across a panel which projects an extra couple of inches and descends more than two feet lower. The archway extends four feet inwards, to the segmental vault of the guardroom, which is nine feet six inches long and eleven feet six inches wide; the rooms on either side have been destroyed. The octagonal tower above the guardroom has also been destroyed, but the parapet of the curtain bends past its site, thereby recording the length of the seaward facet, eight feet six inches.

On the north side of the court a row of four barrel-vaulted rooms backs against the curtain, which is pierced in each by a segmentally arched window, three feet six inches wide and three feet two inches high; rectangular doorways (now blocked) faced on to the court. These rooms (Fig. 45.3 and 4), may have been among the hasty constructions of 1784, for they are outrageously irregular in plan (varying between twenty-one feet six inches and twenty-three feet in length by ten feet six inches to fourteen feet in width internally).

On the opposite side of the court stands the one remaining twostoreyed building, which can be only vaguely dated to 1802-47 (Figs 46, 47.8). Its ground floor is composed of four somewhat comparable rooms, but they are genuinely rectangular and have wooden ceilings, which compose the floor of the upper
storey; three windows, precisely like those on the north, pierce the curtain, and in
the west room another may perhaps have been blocked. The wall towards the
court contains a series of tall narrow windows, of which five are still open. A
recent concrete doorway in the west room leads into the barrel-vaulted magazine
inside the bastion, and may have replaced a doorway inserted in 1847, when the
original entrance from the north was probably blocked. The upper storey (twenty-
three feet nine inches wide) has been lengthened so that it encroaches upon the
south-east bastion, and the other end is no longer rectangular but slanting; the
partitions, too, have been shifted. Tall rectangular windows open through both
side-walls, and doorways with wooden lintels give access from the wall-walk. In
1847 one of the windows could also be reached by a gangway or flat roof which
began at the staircase in the court.
This twisting staircase was built in 1847 (Fig. 47.19) in substitution for a previous
double stair (Fig. 45.5); the present steps are fairly recent.4 The stair projects
from the west wall of the court, between which and the west curtain is a space that
was replanned on the same

KETA: FORT PRINSENSTEN

two occasions. In i8oo a great storeroom (6) stretched the entire length, and soon
afterwards was overlaid - at least in part - by the commander's lodging, which
Svedstrup demolished in 1847. He converted the site into two open yards for
cattle (Fig. 47.10) divided by a passage (ii) which he describes as 'vaulted'; records
suggest that this central portion had been made into a 'vaulted' magazine when the
lodging was built, but perhaps the roof, which no longer exists, should strictly
have been termed 'cross-arched' The area of Svedstrup's southern yard still
contains brick crossed arches, which spring from the walls on the other three sides
to pillars free-standing on the floor or incorporated in the modern wall of the
passage. This sturdy cross-arching must have been built to support the wooden
floor of the commander's lodging.5 Svedstrup, of course, had no reason to mark
the arches on his plan, nor, probably, to demolish any of them; those utilized to
cover his passage must have remained standing into the British period, and so
perhaps did those in the northern yard.
None of the brass three-pounders with which Svedstrup rearmed the fort has been
left there; five brass guns are known to have been removed early in the British
period to Christiansborg. A large number of earlier iron cannon may be still seen
outside; perhaps Svedstrup dumped them on the ground in order to clear the
bastions. Four iron signal-guns, preserved elsewhere in Keta, must have come
from the fort. The only gun that has been kept in place is a piece roughly a
century old, mounted on an iron carriage.
I The fort at Ada has been demolished, but the site, on the bank of the Volta, is
still marked by a few bricks and a cannon. Isert's plate showing the facade of the
uncompleted structure must be dismissed as a fantasy of his own or a muddle of
the engraver's, unless drawings supposed to represent the completed fort are
views of Prinsensten. The recorded dimensions are 136 by i30 alen, each of two
Danish feet or 25 in., but comparison with Prinsensten suggests that these figures
really gave the numbers in feet. On that assumption, the increase in size at Keta, six Danish feet, must have been confined to the length alone, the width being left unchanged.

2 Towards the end of last century the sea had retreated, leaving half a mile of beach available for official and other buildings, each of which stood within its separate compound. But in 1932 the sea advanced practically to the fort, into which some of the Government departments moved as soon as quarters could be built for them. Others followed about ten years later; most of the fort was then used as a prison, and the rest as administrative offices, a court-room, the customs and a post office. Meanwhile the sea again retreated, but another period of advance set in, and in 1956 the waves actually splashed the walls, before erosion was checked by protective works.

3 A doorway was pierced through the west curtain some twenty years ago, when a second courtyard was built just outside the fort, as an extension of the prison.

4 In the present staircase, the lowest steps rise westward but the second and longer flight southward; formerly the latter maintained the same direction to the top of the stair, but has recently been made to debouch to the west. The second flight is supported, first, by the segmental arch of a gateway, aligned with the entrance on the opposite side of the court, and then by the barrel-vault of a small room, the face of which is continuous with that of the staircase. On the south the room returns to the west wall of the court. A pair of shallow pilasters enframe the arch, and must have carried some decorative feature placed horizontally above it - probably a cornice of several mouldings. In fact, a stretch of moulding can still be traced on the face of the room, but it slants downwards from near the top of the pilaster at an angle of 45 degrees, as probably did the original parapet of the stair from near the top of the corresponding pilaster. The commander's lodging is represented as a long building with ample windows; a central doorway, which opened near the head of the stair, was framed by a pair of pilasters and a tall cornice, placed so far above as to suggest that the rooms within reached an unusual height. The roof, however, sloped markedly towards the rampart and apparently was thatched; the greater height on the facade towards the court must therefore have resulted from the use of a parapet, merely for ornament.

6 Svedstrup's covered passage extended from the archway under the staircase as far as the curtain, and there must have been doorways in both side-walls to allow animals to enter the cattle-yards. Not long before 1932, the area to the south was again roofed over and separated by a wall to form a large cell, beneath a Prison Office, which was built on part of the site of the commander's lodging. The east wall of the room is obviously ancient and contains an arched window with splayed sides, and the south and west sides are formed by the bastion and curtain respectively. The modern roof (of concrete) has been imposed upon the old arches, which compose two aisles in either direction, all four of markedly different widths. Single arches spring from three piers incorporated in the west

FORTS OF THE LATE EIGHTEENTH CENTURY

staircase. On the south the room returns to the west wall of the court. A pair of shallow pilasters enframe the arch, and must have carried some decorative feature placed horizontally above it - probably a cornice of several mouldings. In fact, a stretch of moulding can still be traced on the face of the room, but it slants downwards from near the top of the pilaster at an angle of 45 degrees, as probably did the original parapet of the stair from near the top of the corresponding pilaster. The commander's lodging is represented as a long building with ample windows; a central doorway, which opened near the head of the stair, was framed by a pair of pilasters and a tall cornice, placed so far above as to suggest that the rooms within reached an unusual height. The roof, however, sloped markedly towards the rampart and apparently was thatched; the greater height on the facade towards the court must therefore have resulted from the use of a parapet, merely for ornament.

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and south walls and the north-west corner, while four arches meet at one free-standing pillar, and three at another (in the modern north wall, which is no more than a filling between the arches). The arches are of brick and 15 in. wide, and carry brick spandrels. The piers and pillars consist of stone; they are thicker than the arches, and chamfered at the junction. The siting of the supports must have been dictated by the plan of the projected building above. The eastern aisle, only one quarter as wide as the western, carried the continuation of the staircase, and the pillars were meant to stand immediately below the east wall of the upper storey, while their uneven spacing should indicate the course of a partition at right angles. Beyond question, the whole of the arch system is homogeneous and of one period.

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