Fortified trade-posts: the English in West Africa, 1645-1822

Fortified trade-posts: the English in West Africa, 1645-1822

Author/Creator	Lawrence, A.W.
Date	1969
Resource type	Books
Language	English
Subject	
Coverage (spatial)	Volta-Tano Watershed, Ghana, Elmina
Source	Smithsonian Institution Libraries, DT475 .L33 1969X
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Description	A.W. Lawrence offers an abridged version of his much longer book Trade Castles and Forts of West Africa. As the title implies he focuses on the activities on the English and includes information about other Europeans and their trade forts as it is relevant to English trade and control along the coast. Like its predecessor this book also contains many drawings, pictures, and building plans.
Format extent (length/size)	263 pages

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THE ENGLISH IN WEST AFRICA
1645-1822
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JONATHAN CAPE
THIRTY BEDFORD SQUARE
LONDON
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FIRST PUBLISHED 1963
under the title Trade Castles and Forts of West Africa

This edition, recast in a shortened form and re-titled Fortified Trade-Posts: The English in West Africa, 1645-1822 FIRST PUBLISHED 1969

JONATHAN CAPE LTD
30 BEDFORD SQUARE, LONDON WCI
SBN 224 61575 0
PRINTED PHOTOLITHO IN GREAT BRITAIN
BY EBENEZER BAYLIS AND SON, LTD
THE TRINITY PRESS, WORCESTER, AND LONDON ON PAPER MADE BY JOHN DICKINSON AND CO. LTD
BOUND BY A. W. BAIN AND CO. LTD, LONDON

FOREWORD

BETWEEN 1482 and the introduction of Colonial rule in the nineteenth century, scores of fortified trading-stations were maintained in West Africa under the Crowns of Portugal, Spain and Sweden or the Chartered Companies of Brandenburg-Prussia, Courland, Denmark, England, France and Holland. Each post - whether it were a castle, a lesser fort or a mere house - contained residential quarters, offices, storerooms and workshops. Official and unofficial writings by the occupants and by visitors reveal the life of these communities, which were isolated but for their co-existence with the Africans, upon whom it had far-reaching effects. My long book, Trade Castles and Forts of West Africa (Jonathan Cape, 1963), covered the broader aspects of this enormous subject but was primarily concerned with the history of individual buildings. It recorded, in detail, the observations I had made while directing the repair or restoration of eleven monuments in Ghana as well as the survey of others too ruined to be worth conservation. Inevitably, much of the contents was of purely specialist interest; rather than issue a complete reprint, I have, therefore, prepared this abridged version.

I have kept, almost unaltered, the eight introductory chapters, the two on the initial Portuguese venture, and all those on English tradingstations about which, as it happens, a far more varied range of information is available than for their competitors. But there are, exceptionally, some unofficial or personal writings concerning early years at the Dutch headquarters; most of that portion, too, is incorporated together with a summary description of the building itself in the final state, since that is relevant to English activities. Other chapters on individual Dutch, Danish and Brandenburger stations have been omitted, but I have inserted passages of basic information on the more notable (actually all those of which intelligible remains can be seen), together with selected plans and views which show them in their best condition.

The introductory section has been amplified by these additions, and only one passage has been omitted from it, an account of a Danish building near Kpomkpo

(Trade Castles, pp. 86-9). That is now known to have stood on the Daccubie plantation, which the Ashantis destroyed in 18 11 (H. Jeppesen, Geografisk Tidskrift, 65, 1966, p. 59, and in English - p. 8I). Since, however, the ruins showed no trace of burning or deliberate injury when (in 1956) I had every portion cleared

FOREWORD

of 'bush', the identification has raised problems that require more discussion than would here be appropriate.

The bibliography to Trade Castles (pp. 369-82) listed fewer printed than manuscript sources and scarcely any that can be found except in great libraries. Instead of tantalizing the general reader by listing such matter, I now refer him only to the one recent book of consequenceK. G. Davies, The Royal African Company (Longmans, 1957) - and (in notes added to the chapters 'Early Draughtsmen' and 'Gambia: James Fort') to the best informed of the early authorities.

London, A.W.L.
March 1968

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PART ONE
INTRODUCTORY

THE PLACE OF THE FORT SYSTEM IN HISTORY

T ONE 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 lay-out 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 io,ooo a year, its successor IO-15,OOO; 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 C2o,ooo.
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 Senegal and the Niger, the Europeans found merely tribal states, constituted by a single little town or by a town with dependent semiautonomous 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

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 I85o 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

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.

THE SETTING OF THE TIMES

T o 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 African 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

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 "'470 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 x667, 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 1 535-50 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 rsetse 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

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 cr 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

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 S o 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 i500, 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

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 16oo, 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 158o 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 S o 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 x624; 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

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 ih 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

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 Sio 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 groye 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 16oo, and not disseminated throughout West Africa till nearly two centuries later. Asiatic rice, though p'referable 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,

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 facilitiate 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.

INTRODUCTORY

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], lavers 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 SAo 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, Gorse, 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 168 1 with a single hut.
The nearest forts to the south were Portuguese, at Cacheu (founded 1587-8 and strongly fortified in 1641) 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 1 728 ; 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 thousanid 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.

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 callingplace, 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,

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 called Daccubie, one 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,

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 i 8o8 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 18o3, 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 executants on the spot were

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 I789, 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 1,76o persons, including Company's soldiers and Company's slaves' Since the population of Cape Coast was estimated at i i,ooo 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.

ORGANIZATION AND PERSONNEL

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 i529 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, 8oo, was augmented by an allowance of 2o 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 2o, 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-darner (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

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 (9o), and the Commodore in charge of the dockyard and coasting vessels (8o). 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

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 (i2). The sergeant (i8) 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 i 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 (6o fl.) was assisted by three junior trading officers, and the garrison numbered twenty-eight, with a sergeantin-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 fl., 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 fl. 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,

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 ajunior officer, with the strikingly Dutch name ofJan 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-

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 Gor'e 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

maximum support soon after 17oo, 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 Princestown 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 I7M7, 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

ORGANIZATION AND PERSONNEL

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 3,72o Kroner and an expense allowance of i,86o, out of which he regularly provided meals for his officers. The commanders' salaries varied from i,86o 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 x, i16, 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 3o 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 [18 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

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 fifiancial or practical help with his building; on the other hand, his attendance at meetings involved leaving his own work to the second-incommand, who might be inexperienced. One such case, in 178o, inspired a threat of resignation to the Governor, from Commenda:

The expenses I have already incurred, by my absence from my concerns here, makes me inclined to give up the command, kJioo per annum with the profits of the trade not being sufficient to counterbalance the extra expenses and Second's table ... I have

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 (i 788), 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 Europeanstyle 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 i8M6, 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.

LIFE AT THE FORTS

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 nevej 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

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 i 8o i ; 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 Ehglish 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

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,

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.

LIFE AT THE FORTS

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 canoemen 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 lingered in the more southerly waters; too often the seamen's chanty scarcely exaggerated their deathrate 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

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 unsuitablc 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 i823, 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 light-

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 (I709-I2), 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 (I805-9) 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 I 1.3o every Sunday, or be fined 7s. 6d. unless the Governor

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 17o8 or i709, 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 highestsalaried 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 50s. 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

T MO S T (not all) Company stations, the money and effort expended on guard duties and other measures of security were regarded as 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 consoled 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.

RELATIONS BETWEEN FORT AND TOWN

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 I 750 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

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

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

T HE European traders recognized three classes of fortified tradingstations: 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 controlpost 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

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
o 0 o F
I p, . ,
o 15' M.
FIG. I Anomabu Fort. Plan offortifications 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

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. 13). 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. 8, 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 (PI. 14, 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 upon 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-

lation 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

18"'- I9" 24"

FIG. 2 Ningo: Fort Fredensborg. Plan of slits for small-arm fire, 1956

of Dutch Commenda) 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..

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

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 14, foreground, I9); 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 leant 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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FIG. 3 Comparative plans of English spurs at Cape Coast, Tantum, Winneba and Accra
i Cape Coast Castle, 1727 (after Smith, as engraved) 5 Winneba Fort, 1756 (after Watson;I Smithy
2 Tantum Fort, 1756 (after Watson;x Shed begun
2 CoMhouse 2 Kitchen
3 Kitchen) 3 Cornhouse)
3 Winneba Fort, 1727 (after Smith, as engraved) 6 Accra: James Fort, 1727 (after Smith's pen-and4 Winneba Fort, 1727 (after Smith's pen-and-ink ink draft)
draft) 7 Accra: James Fort, 1756 (after Watson)
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the Coast (except possibly at Gorse), though once proposed as a means of strengthening Anomabu.
Another type of outwork was formed by a low wall which enclosed the entire fort - except at Axim, where it links two bastions (Pl. 31 b). There, and at Shama and Bereku (Figs 4, 5; Pl. 3 1),2 the Dutch also built a spur farther out. The Danes at Christiansborg set the gateway of the outwork in a double bend, as though in substitution for a spur (P1. 32),' 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-moon3 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. 7; P1. 3b); 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 Mouri, 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 (P1. 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 haLlf 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

FIG. 4 Shama: Fort St Sebastian. Upper plan, Feb. 1791

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
9 Flag pole
io Kitchen
I I Cistern
12 Room over armourer's lodging 13 Battery over storerooms 14 Another room built on x5 Tiny room on bastion

FIG. 5 Bereku: Fort Good Hope. Upper plan, 179o

Outer gate Guardroom Entrance Assistant's lodging Granary
Stair to battery Bedroom over garrison's storeroom Hall over storeroom Balcony Room over small storeroom Small hall over storeroom
I I Room over female. slave-prison 12 Cistern 13 Kitchen 14 Soldiers' lodging 15 Sergeant's lodging 16 Male slave-prison 17 Corporal's lodging 18 Soldiers' kitchen 19 Powder magazine under bastion 20 Outwork

curtains, which were wide enough to take small cannon everywhere and bulged at one point to accommodate larger guns. In 172 1, 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 halfpound 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 (1684), the Dutch at Bereku (17o5-6) and the Danes at Ningo (1736) used the triangle as a preliminary towards a four-sided lay-out. To make Bereku square (Fig. 5), 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 175o-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 1 72o, after which they lay dilapidated till shortly before another catastrophe in i728. 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

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 illdesigned 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 i 68o 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 comer 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 facade was outflanked, but the backs of the bastions extended across to the other, terminating flush with it as mere batteries of twenty guns in all. Bastions were placed only on two diametrically opposite corners of certain square forts; one of these was a French

reconstruction of a ruined Dutch work at Gorse, and another, founded later (i 7oo) 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
FiG. 6 Gorle: Fort Vermandois. Plan, ?6&o
i Chapel 4 Kitchen 6 Slaves
2 Lodgings 5 Pavilion 7 Bell
3 Governor's lodgings
bastions, and at the south corner by a rectangular projection to the west alone - a sort of half-bastion. The same device of enclosing one fort within another was applied by the English at Commenda.
The other Dutch fort at Gore, at the opposite end of the island, was reconstructed by the French, shortly before i 68o, with an extraordinary outline, resulting from the use of four half-bastions with minimal flanks

(Fig. 6). But the situation and purpose of the Gorge 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. 7, Pls 2, 3b, 4a). 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. The curtains - then already twelve feet high - were 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 halfbastions 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 remained some years thereafter. In 1671 - the date is known from an inscription4 - the fort was surrounded by an outer wall slightly higher than a man, as though to form a tribal refuge (Pls 2, 4a, 32); 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. 7. 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
Commander's room Commander's hall, over barracks Commander's bedroom, over
powder store
Stair, over porch to storeroom Inner wall-walk Raised walk Bread oven Shelter
Shelter

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 careful drawing of 1724-5, but the plan of 1774 (Fig. 7) 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 distant view of i679, but he may have been confused by a balcony half-way up, and by the movement of his ship; if the present square tower (P1. 3b) 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. 8), 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

FIG. 8 Fort Ankobra. Plan, c. 1750

convert Phipps' Tower into a smallpox hospital surely implies additional space. Provesten, the tower outside Christiansborg, was much larger and easily contained its garrison (P1. 32, right). A circular watchtower outside Elmina, built about i 8oo, 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 (i787), 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 (P1. 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 one 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 (P1. 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 i781-2, 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 (P. i i). The palisade which at first surrounded Akwida (1684) 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 (i 726); 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 I7o9 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 cledr 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.'

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 x 789, 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.
When the requirement arose, additional accommodation was usually provided within existing fortifications, so that the inner buildings

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tended to become taller or densely packed, or both, and even less air reached the ground-floor rooms. Lateral expansion occurred, as a rule, only when unsatisfactory fortifications were replaced. There was one outstanding instance of much upward accompanied by some lateral expansion, but at a headquarters; that status entailed comparatively generous limitations on expenditure, even though the Company in question, the Danish, held quite a minor stake in Africa.
As an example of aggrandizement, Christiansborg is, actually, 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 i 66o, 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,5 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, The British, who had bought the Danish possessions in 185o, 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

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remains below, which have been left almost intact. By comparing the evidence they afford with old sources, especially plans and views (PI. 32), it is possible to trace successive stages of alteration and expansion throughout the Danish period (Fig. 9).

The fort occupies the corner of an extensive plateau of soft rock, overlooking the sea on the south and commanding also a view albng 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.

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.

I The fort at Axim occupies the whole of a small promontory, which imposed a triangular outline. It was founded by the Portuguese soon after 15oo and taken by the Dutch in 1 642; the fact that it held out four and a half years longer than Elmina testifies to the strength of the fortifications. These are still largely Portuguese; both the bastions may be ascribed to a late phase of the sixteenth century. The original inner building, near the seaward end, was replaced by the Dutch at the middle of the following century and afterwards enlarged. The back of the landward curtain was lined, early in the eighteenth century, with two storeys of rooms throughout and a third at either end. The anomalous stretch of outwork in front, commanding the approach to the gate, dates from the same period; the conventional adjoining stretch, along the foot of a bastion, is known to have been built beforehand, by 1709. A restoration of the whole fort was completed in 1957.

The Portuguese established a little fort at Shama about 156o; they enclosed it with an earth bank and a palisade, which followed the edge of a natural terrace. The Dutch undertook a wholesale rebuilding in I665 and began to add the outwork some twenty years later; the gateway of the spur bears an incised date, 169o. A few minor alterations were made within during the eighteenth century. A general restoration was completed in I57.

The Dutch built a triangular fort at Bereku in 1705 or 17o6 and soon converted it to a roughly square plan. The outwork may be ascribed to the third quarter of the same century; traces of it can still be seen along most of its former course, and short pieces remain to the coping, seven feet above the present ground-level. The bastions of the fort proper are wellpreserved, together with much of the curtain-walls, but the inner buildings have been reduced to their foundations or entirely demolished.

i" 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 mQunting 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.

4 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.1 (1952), figo 7.

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An inscription over the inner doorway is no longer legible except near the right edge; the top line ends BURCH, 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.

5 The Danish fort at Keta, founded in 1784, was the last of considerable size to be built on the Coast. A drastic reconstruction was undertaken in x846, and, with new armament, enabled the garrison to withstand a siege by the townspeople in the following year. In 1850 the Danes sold the fort to the British; they, too, were besieged there in 1878, by tribesmen of the neighbourhood. The fortifications remain almost intact but the inner buildings have long since lost their architectural character or been demolished.

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 roofingor 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 175o, 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

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 27a, 3oa). 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 straightto. 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 (x 756) of a great cistern at James Fort, Gambia, is likely to have beeri 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

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 177o 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 man-power (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 (i 753), 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 1 777 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 1 788 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

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 Assinie, 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 Mouri 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 (ce. Journal of African History, II, i96i, pp. 228-9). He was a Huguenot, who left France because qf 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 Gor6e, dated i 68o, and one of Cape Coast Castle, signed by Barbot's friend Greenhill and

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 1732,1 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 (I7o9) 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.2

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 Diferent 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

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. 18). 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 179o-1. 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

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 Assistente and Assistenten was always indiscriminate, since there could have been more than one junior officer of Assistant rank in any fort.
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.
I In vol. V of the Voyages, published by A. & J. Churchill (1732).
2 A very readable translation with small engravings: William Bosman, Description of the Coast of Guinea (1705, 1721, 1907).

PART TWO
ELMINA CASTLE -THE PROTOTYPE

THE EARLY PORTUGUESE PERIOD
(1482-I55o/8o)

THE natural advantages of the site of Elmina must have been

apparent to the Portuguese explorers of i471, 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 i62o 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

the British, and no reliable drawing records its appearance before 1 6oo. 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 155o, 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 2 ist, 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)

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 I 515-2o 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 facade 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

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; later builders applied a polygonal casing and increased the height (Fig. 1O.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 (PIs 7a, 8a,b), 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. 10.13), 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 (P1. 9); 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 right). 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 164o-4 (PI. 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 (PIs 7a, 8a, 8b). Its own roof must have been virtually 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. I I c.I 7). It is separated from the rectangular block by a passage (Fig. i i a. I6), 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 i482 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 i a and b. I7); at the ground level, however, the construction is evidently suitable for the purpose.
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. i o) 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 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 Ia.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 horth 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 i482, 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

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, up~on 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 the second lifting-section of the bridge (Pls 9, io). 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. i i a; Pls 9, I o; Fig. I o.F, 18, I9). 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

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 outer ditch (P1. 9); 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 151 o 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 151 o, 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 wallremained 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. However, the

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 9, i o), 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 (Pl. 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. xo.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. i i a). 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. 3a); 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

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. io) shows steps evidently descending from the south-east towards the basin. The Dutch stair (Fig. i i a) 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 Montem6r 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. i o). Its purpose is easily surmised, because another such buttress, though narrower (I3), 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 i o6

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 I5o6-8, 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 LATER PORTUGUESE PERIOD (1550/8o-i637)

T HF 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 Belem, was built in 1515-2o, 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 158o 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 155o, 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 io8

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 only 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 10.3, i ia.7; Pl. 7a). Although greatly altered, it retains the four upright bands of Portuguese bricks which diversified the entrance facade, 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 16oi) 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. 10.14) as much larger than today (Fig. i a 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,

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 i6oi, 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. 1I), 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 I640-4, 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 i a. i). 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 clearly on a 'map', 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 110

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. io, 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 (P1. 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 (P1. 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 Fort - 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. i o.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 (PIs 8a, b). 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 clearly 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 P1. 8a must represent a room near

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 164o 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, made by a Dutch skipper in February 1640, shows, though vaguely, two external gateways. The inner of these still exists (P1. 20) 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 Damlo in India, over the entrance of Fort St Jerome, dated by an inscription to 1614. The gateway projects in front of the curtain (Fig. i i a); on the inward side 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 doorway. 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 (P1. 6b) 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 162o 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 outline drawing of 1640; 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 (P1. 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 15io, 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. i o). 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 x782) 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 i637 was very much larger than at present, and quite differently shaped. According to the plan (Fig. 10. 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 mag tzine, 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
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equally 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 (P1. 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, and on another of the drawings copied for Vingboon which 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 Marees 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,

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 i o. 12, 1 i a, b). 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 i8oo, 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 riflerange, may conceal masonry instead of rock down to the base of the cross-wall.) Towards the sea (P1. 9), 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, 1 ia). 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 drawings of 1637 and I64O-4; 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 'I3', 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 (P1. 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

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 shows it, from outside the castle, as a 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 (Fig. 10.2 1), 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 StJago. 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

to the low battery which they built to replace the projecting part of the north bastion (Fig. i ia, outline left of 18). '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.

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. 7b) 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. 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.

RATIONALIZATION BY THE DUTCH (1637-82)

WHEN 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 fagade 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. io) 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, but the various 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. io), 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 ('4)] 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 (I 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 o 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 (i8)] which goes from the Armourer's Battery as far as the Governor's Battery [south to west bastions (7-1 2)] ; 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.

RATIONALIZATION BY THE DUTCH (x637-82)
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 127

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 194o (omitted from Fig. i i).
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 164o-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

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2 ELMINA: FORT ST JAGO
South-west bastion seen from tower

3a ELMINA CASTLE Basin for watering ships
3b ELMINA:FORT
ST JAGO
Entrance

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

4O j u i Gate
2 Sheep shed
vs. ._ : : ,2...3 Kitchen
A"4, Privy . ' 2 5 Lodging rooms
6 Apartments
0 20 FT 7 Hall
_ _ 8 Store
0 5 M. 9 Store over magazine
a Upper plan, January 1756 (after Watson)
5 PRAMPRAM: FORT VERNON
b Section, 1756 (by Watson)

6a and b
ELMINA CASTLE
Ornament over main gateway

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8 ELMINA CASTLE
a August 1637 (by Propheet) b 1640-4 (Vingboon copy)

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

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a 1727 (after Smith)
I8 COMMENDA: ENGLISH FORT b Viaduct between inner and outer buildings

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23 DIXCOVE FORT Entrance

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

26 ANOMABU FORT
West side with main gateway

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28 ANOMABU FORT
b North-east corner of court

a South-east bastion and small gateway 29 ANOMABU FORT
b North-west corner before restoration, 1953

30 BEYIN, FORT APOLLONIA
a Court from entrance b South corner from entrance

3a SHAMA: FORT ST SEBASTIAN 1709 (after a Dutch officer?)
31b AXIM: FORT ST ANTHONY 1786 (by Fisscher?)

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RATIONALIZATION BY THE DUTCH (1637-82)
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 2oth, 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 i i th, 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 2oth, 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; it filled the gap (Fig. i i A. 15) between the inner and outer ditches - where a British shed (now demolished) is seen on the aerial photographs (Pls 9, i o) - and can be identified as a gate-house which controlled access to the riverside yard.
On September i 6th, 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 16oi had used the south tower, but this was allotted by the Dutch to the chief merchant (Fig. io.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.
At the change of Governor in December 1645, an inventory was taken Df 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 2oo and i,ooo lb.' were clearly meant for sale, and no doubt many other classes of goods were available 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 i645 (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 I 5th, 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 wellknown 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 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 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 i666, 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:

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 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 ofJohn 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 StJago'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.

That description dates from two years after the English had built Cape Coast Castle, only a few miles away. In contrast to their previous forts at Cormantin and in the Gambia, which were small, mean in appearance and shoddily constructed, their new headquarters was deliberately made as nearly comparable to Elmina in size and quality as their more restricted means allowed; in using brick, too, they imitated Dutch practice. The respective Companies invited customers by the grandeur of the castles, which were then the only European buildings of distinction in Africa. Nor was their pre-eminence seriously impaired thereafter; the Brandenburgers, who thrust themselves upon the Coast in 1683, sold their less impressive Gross-Friedrichsburg in

1720,1 while the cramped Danish headquarters, Christiansborg, gave but meagre architectural scope (Fig. 9; P1. 32). Emulation between Elmina and Cape Coast strengthened with the passage of time, and continued into the nineteenth century; any improvement or embellishment to either castle inspired some rival attraction at the other. The following brief account of Elmina in its final state is, therefore, indispensable to consideration of the English achievement.

IGross-Friedrichsburg was a fairly large, square fort, with a courtyard lined on three sides by sober two-storeyed buildings. It was completed in 1684 and little altered thereafter, though a semicircular tower was added soon after 1708, midway between two of the corner bastions. The Dutch held the fort (renamed Hollandia) from 1725 till its abandonment some ninety years later, when it was already in an advanced state of decay. The ruins (above Princestown) were recently conserved and in part restored.

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THE COMPONENTS OF THE PRESENT CASTLE
(Fig. i i omits British additions)
HIS summary guide to the castle as it now exists is intended to distinguish the various pieces of work and to assign an approximate date to each. Descriptive matter for the earlier has been given in the
preceding sections, where the grounds for dating are set forth; work of the later periods of Dutch ownership (which lasted to 1872) is described, and its chronology discussed, in my Trade Castles. To avoid constant repetition, the present section has been written on the assumption that the reader will bear two dates in mind: those of the foundation by the Portuguese, 1482, and of the Dutch capture, 1637.
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 para pet towards the river may be of that date; on the nearer face it was reduced to a curb between 17o2 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 i8o6 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.

ELMINA CASTLE - THE PROTOTYPE

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 fa~ade 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 kitcherr 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

THE COMPONENTS OF THE PRESENT CASTLE

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 c') and another of floral design, which encloses the balcony above, date from the beginning of the eighteenth century. The faqade 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 fagade 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

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 i8o6 along the south-west side, and a new frontage on the north-west, built about 1940-2. 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 faqade 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 164o-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 threestoreyed 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

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 wail 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

CORMANTIN: THE ENGLISH FORT AND FORT AMSTERDAM

A N ENGLISH trading-post, which probably originated in 163 1, is said to have been converted into a fort in 1638, but the venture did not succeed. In December i645 news reached Elmina that 'the English ship Hope hid 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 i81i, 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 levelled summit of an isolated hill, which on the south falls precipitously to the sea, while the slopes elsewhere are too steep for easy walking. By i682 steps had been cut in the rock to improve the path up; it may already have led to a passage with slits through a triangular spur, known from a view of 1704 and plans of 1786 and 1790-I (Fig. 12), and still represented by a few scraps of masonry. The fort proper is entered through an archway in the north curtain (Fig. 12.5). 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

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FIG. 12 Cormantin: Fort Amsterdam. Upper plan, x7, -I

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 o
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: THE ENGLISH FORT AND 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. 12. 1o-1 2). Along the south, however, a line of two- and threestoreyed 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 17The 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 k20,ooo 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 i665, 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. 12.18) 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 [1]679 inside a pedimental frame.
Another vault in Dutch yellow brick, over rooms lO-12, 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 (1O-12) 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.

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 rather like the present seaward end of Elmina (Pl. i o), because a two-storeyed block of rooms was joined at each end to towers of a uniform height. A taller and wider tower behind could also be seen projecting above the roof.

Barbot's view of 1682, though, 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 very crude view from the land, published in 1704, 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 (Fig. I2) ; an almost illegible inscription, which fits a panel in the landing, seems to give the builder's name as Governor Swerts (16841689). 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 163o, 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.

Barbot's view of 1682 also shows the two storeys of rooms behind the north curtain under construction, at any rate towards the east end,

 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 Dutch had then removed every vestige of English work inside the fort, probably because none of it was worth preserving. Such portions of the surrounding wall as they retained did not, by any means, reach their own standard of construction.

GAMBIA: JAMES FORT
(PIs II, 12)
E u R OPE A N 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

GAMBIA: JAMES FORT
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 168o-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 169o 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 i682, 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

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

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. 14).

The English re-occupied James Island in f699, 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 17o8, 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 17o8, and by complete withdrawal from James Island in 1709.

The condition of the fort at that date is known from the plan (Fig. 13) 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

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The Slavecs Hkoufk.
The Common Burying-Place.
OIJAL
FI.- IT3 (1. and r.) Gambia:
The Stairs to go uip into
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James Fort. Plan, 17o8-9

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 juml 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 i703-4, when the thatch taking fire by lightning or carelessness forced those within to quit the 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 i714, 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 172 i, 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. i I) with the later surveys (e.g. Fig. 14) 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,

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. 14.8) struck him as 'the worst I ever met with; it is under the east bastion,

FIG. 14 Gambia: James Fort. Upper plan, Oct. r755

i Entrance (below)
2 Long room
3 Council Room
4 Governor's room
5 Apartments
6 Shot
7 Latrine
8 Magazine
9 Cistern io Flagstaff
i6o

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 fagades 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 (P1. 12). Similar rectangular windows and doorways existed on both the inward and the outward faqade, 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.2 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 172 1. That plan represents the other two bastions of the time with a diameter of roughly sixty-four feet, whereas the one which 162

survived till the last was drawn in 1755 with a diameter of forty-three feet, and in 1783 of fifty feet. 3
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 (PI. i2) 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.
I Anon., A True Case of the Present Differences between the Royal African Company and the separate Traders (1710).
2 Golbry, 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 i721). 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. 3 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.

CAPE COAST CASTLE
THE ENGLISH HEADQUARTERS
(PIs 13-16)

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 i664, 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 threequarters of the Swedish fort. In 1682 the officer in charge, Greenhill, drew a 'perspective' or bird's-eye view, engraved not long after (PI. 13), 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 175o and 1756 prove that the remainder of the bastion still existed behind the facade 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 164

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. I5.9b), though ignored on a rather diagrammatic plan of 1727 ; 2 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,

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 166

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 (172 1) 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 i737 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 i778. 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, i,ooo 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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CAPE COAST CASTLE: THE ENGLISH HEADQUARTERS
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 znd 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 175o and 1756 (Fig. 15), 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 I727 (Fig. 3. i). By 175o a new and wider spur had been substituted; it now stands externally unchanged (Fig. 15). 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 169

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 ciastle 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 limemortar and, no doubt, replacing the illbaked 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 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 (P1. I6b) 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 apiece. 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 (1768) submitted to London for a southward extension of the castle; the scheme actually adopted was that of John Grosle, or Grossle (Fig. 16). 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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strongly fortified gate was built immediately south of the east point, and its completion in 1 777 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. i6a), 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 I777 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 ioth, 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 i778 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

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 2oth 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.

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 butler), 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 178o 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

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-I 'Smith's Tower' was replaced in durable materials, and renamed Fort William. The square tower (used as a lighthouse ever since i835) 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 M

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 gardens4 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.

1 According, mainly, to Tilleman, the sequence went as follows:

1657 Founded by a Swiss officer on behalf of the Swedes

i658 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
x66o Returned to the Swedes, then under an officer from Hamburg
166o Transferred to the Danes by treaty
1663 Seized by the Fetu
1663 Bought by the Dutch
t664 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, 18o3, 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 x838 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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ENGLISH COMMENDA: THE FORT

(PIs I7, i8)

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 (PI. i8a) show that the-fort, then 'the
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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
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FIG. 17 Commenda: English Fort. Ground plan, April r756
8 Kitchen (thatched) 13 Slave Hole
barrack 9 Barracks (thatched) 14 Base of tower
io Carpenter's shop
(thatched)
Inner Fort: i i Store 12 Magazine
Fallen
This part already built Ground prepared for rebuilding
Ijunner s barrack Smithy
Storerooms (thatched) Stock shed (thatched) Shed for logs, etc
the middle of the inner enclosure stood a tower (possibly identifiable with the 'turret' of 1704). The back of the outer curtain was lined with rooms continuously on all four sides. In 1739 the inner fort was said to

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. 17) 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 thatchroofed. No later alterations seem to be recorded, but at some date after 1756 a viaduct (P1. i8b) 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 i816; a report of i821 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 I756, 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

locally baked brick; these should probably be dated between 1708 and 175o, 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 (P1. i7).

DIXCOVE FORT

(PIs 19-25)

No OTHER 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

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 i8io 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 169o 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 169o. 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 wquld, 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

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 i6th 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 i8th, 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 ist 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 17o6, 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 31 St, 17o6, 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 1 710.
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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 I709 (Pl. 2oa), 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 i i th 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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DIXCOVE FORT
FIG. 19 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 (P1. 2oa). 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 Couny'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 18, i9), 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 I 7o9 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. 19, 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. 20.6).
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 twentytwo men and fifteen women in 1730-I. Ships also obtained wood and water from Dixcove, in preference to other forts, because the landingplace 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 7o 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 i ith, I75o, 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. 2o) 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. 2 1). 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. 23; PIs 24, 25b). 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

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 Cio6.

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, thp 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 inkling 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 I 3th, 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 i6th, a parapet of boards, wedged in place with stones, was built along the whole length of the recently built platforms, and on

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 i 8th 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 21 st 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

[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 i i th 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. 21), 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 i i th, 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 i ith 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 fourpounders (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.

The war dragged on into 175 1, 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 £ioo a year), he had a sergeant and a gunner (both at C36), and eight soldiers (at C27). The tribal Chief, who was recognized as the 'ground landlord', was paid CI 2 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 un 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 196

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 tenpounder 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 i750), 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 irrival, 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 I 75o, 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 sixpounders, 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. 2 1). 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 175o 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.

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FIG. 21 Dixcove Fort. Upper and ground plans, May z756
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DIXCOVE FORT

The tower over the gateway - which was the commander'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 i8th 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

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. Tht state of the fort remained generally good, though in I 760 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 i4th, when two carpenters were transferred from Dixcove to Beyin, tools had to be borrowed for them from the Dutch fort at Butre. On August i oth Dixcove applied for the promised bricklayer; he returned to Cape Coast on September i8th. A proposal to re-roof the tower was received there on August i 8th.

The forests behind Dixcove had been cleared as early as 1756, and were again 'quite exhausted' by 1779. In I78o 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 C6oo 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 18o6, 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. 2ob). 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 £i,6oo, including £186 spent on repairs and £8o on firing salutes; the establishment comprised the commander and the surgeon (whose salaries had been suddenly doubled, to £200, 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 paymerit 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 sixpounders, 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.

DIXCOVE FORT

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 appear-

ance 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 (Pl. I9). 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 i727, 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. 2ob). 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

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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FIG. 22 Dixcove Fort. Upper and ground plans, 955
1756) till it terminates against the intermediate bastion of the south side, after another gap caused by erosion.
From the earliest times onward, every curtain-wall of the fort was built practically upright, while every flanking-work inclined noticeably inwards, always at the same angle except in the last addition to the defences, the north intermediate bastion, of which the inclination is more pronounced. The height of the wall-walk and the bastion platforms is generally about twenty-four feet above the ground outside, though much of the southern slope drops off so steeply that a tall foundation was needed, and there the total height exceeds twenty-six feet. The parapets vary up to a maximum height of some five feet six 'inches.
Old plans and views establish beyond question that the spur and all

the southern external defences were built between 1747 and 1756, and the north intermediate bastion between 1756 and i 8o6, but suggest that most of the square fort of i698 may still be preserved, at any rate in outline (Fig. 22). 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 (PI. 21 a) 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 175o 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 I756 and may well be contemporary with the north intermediate bastion. The triangular sentry-shelter, which first appears on the view of i 8o6, 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 i8o6.

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. 21); 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-§ix 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 -

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 (P1. 21 b) ; 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 1 756, 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 175o-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. 18) 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. 2o), 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 175o and 1756, when Watson drew the entrance in its present form.

The gap between the curtains in 1727 and I75o 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

after 1872, when the fort ceased to be kept in a state ofdceencc, 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 i75o and i756, 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, 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 -

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.:

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 threequarters of the existing fort is due, and the first piece, the spur, was nearly complete by 1750. The previous spur, built before 17o9, 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

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 at the centre, and it splays 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 splays 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 18o6, but were subsequently converted into rectangular gaps, which resemble those that already existed on the north bastion by i8o6, 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.

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 (P1. 22b); 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 I 750 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 tle 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 1954The 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 twentyfive 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 (PIs 22a, 23). 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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FIG.!23 DixcoveFort.Elevationandl)lanofspzírornamenti955

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 fa~ade, incomparably the most ornate on the Coast (Fig. 23; PIs 24, 25b). 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 (P1. 25a) 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 disproportionately 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 (PI. 25a). 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.
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 fasade, 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 splays 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

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 (PIs 22b, 25a). 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. Th 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 1 709 and I727. 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 i8o6, 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

original fort is unknown. Militarily it would seem an error ofjudgment 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 (P1. 2ob). 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 withih 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 i 8o6) 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-i 756, and it may well have been among the works of 1778; it was complete by I8o6. The nearer piece of the north curtain was probably rebuilt simultaneously; it consists of very

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.

ANOMABU THE SECOND FORT

(PIs 26-29)

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 i 68o 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

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. 24, 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 (P1. 29a); canoes can also be brought ashore on the steep and exposed beach to the south (PI. 27b). The more important section of the twin town seems to have been situated west of the fort, which was given a large gateway in that direction (P1. 26); a small gateway faced the better landing-place (Pl. 29a).

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 fagade 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 (PI. 28b).
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AFRICAN TOWN
60 FT .. 20 M.
FIG. 24 Anomabu Fort. Upper plan, March 1756
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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 (PI. 27a) 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. 28a).
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 (Pls 27a, 28b). 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-

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 27a, 28b, 29a). 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 fa~ade 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 faqade, 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 (P1. 29b), 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

court (Pis 28b, 29b), though indeed there is no certainty that it actually met the west building, as the project plan required (Fig. 24). 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 onestoreyed rooms attached o 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 i82O, 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 i 8oo. 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

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 182I 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 (P. 27b).
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.

BEYIN: FORT APOLLONIA

(P1. 30)

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 7,0ooo 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 C2,509. 4s. 8d., of which C2,381 was spread fairly evenly over the first four years, C8i-odd were spent in 17 73, 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 k334 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 182o. 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 i868 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. 25). 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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,.G. 25 Beyin: Fort Apollonia. Plan, 1956-6o
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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 spur with walls as high as the parapets of the bastions, and then through a plain archway from which 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. 3oa) 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 (PI. 3ob) 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.
I 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.

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