Anderson, Donald Drysdale (fl. 1930)

Contributors

Anderson, Donald Drysdale, fl.c.1930

Publication/Creation

1930

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CONTEMPORARY MEDICAL
GC 13
ARCHIVES CENTRE

STAFF DISPOSITION, AUGUST 31ST, 1931 -
Medical Department, Nigeria.

	Date of arrival this tour
COLONY. LAGOS.	
Headquarters Office.	
Dr. W.B. Johnson	7. 1.31
" H.T. Palmer	16. 7.30
" W.H.Peacock	5.11.30
Mr. W.J.Bocking	16. 7.30
" C.G. Hearn	19. 8. 31
" H.S.A.Thomas	16. 7.29
Miss L.M. Single	25. 3.31
Government Dentist	
Mr. C.N. Pearson	17. 9.30
African Hospital.	
Dr. C. Kelsall	22. 7. 31
" [illegible]	[illegible]

	Date of arrival this tour
LAGOS (CONTD.)	
Ebute Metta	
Dr.T.H.I.Potts(E.Disp.& Asylum)	23. 4.30
" A.B.W.Smart(A.Disp.)	25.12.28
Health Office	
Dr. A. Robertson	8. 4.31
Mr. N.W.J.Turnbull	15.10.30
" H.E.Pilkington	19. 8.31
" J.Y. Brown	25. 6.30
" R. Forrest	19. 8.31
" J.J.Murray	26. 3.30
" H. Thompson	19. 8.31
" M. Stockdale	8. 4.31

H Symons

REPORT
on
SANITARY
CONDITIONS.

CONTEMPORARY MEDICAL
GC 13
ARCHIVES CENTRE

Medical Office,

Lagos, 7th July, 1930.

Report on Sanitary Investigation in Oyo and Abeokuta Provinces, 1930.

Sir,

I have the honour to submit a report on the Sanitary Conditions of certain towns carried out by me during the months of April, May and June, 1930.

In a personal interview with the Deputy Director of the Health Service in Lagos on the 3rd April, it was explained that there were reasons to believe that certain towns in the Provinces of Oyo and Abeokuta formed endemic centres of Yellow Fever from which [illegible] in the world. He pointed out to me that to sanitate these towns it was necessary to [illegible] with a view to eradicating this disease, should funds become available at a future date.

On the 15th of April I received orders to leave Lagos and enclosed with them were the lines along which the investigation was to be conducted, (Appendix 1).

I left accordingly on the 16th of April, spent the [illegible] there and reached Ife on the 17th. On the 29th I moved on to Iiesha where I remained until the 9th May. Thence I proceeded to Oshogbo and from here investigated the town of Ede as well as Oshogbo itself. From June 2nd to 18th I worked in Ibadan, and from June 19th to July 2nd in Abeokuta, and returned to Lagos on the latter date.

I take the opportunity here of recording my indebtedness to the following Government Officers :-
Mr.H.L.Ward-Price, Resident of Oyo Province; Captain B.W.Macpherson, Acting Resident of Abeokuta Province; Major R.L.Bowen, M.C., District Officer of Ife Division;

HE HONOURABLE,
HE DIRECTOR OF THE MEDICAL & SANITARY SERVICE,
LAGOS.

E R R A T A.

In the last line of page 16 the word Aedes should read Anopheles as the insect found in the cleaner ponds and swamps. A similar substitution should be made on page 17.

On page 31 under the map reference C:10, read Anopheles for Aedes.

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I owe much valuable information to the kindness of members of the Yellow Fever Commission of the Rockefeller Commission, to Dr.H.Beeuwkes, to Dr.M.A.Barber, to Dr.T.B. Hayne, and to Dr.A.M.Walcott.

Dr.Hunter in charge of the Wesleyan Mission Hospital of Ilesha not only gave me valued help but allowed me the full use of his laboratory.

It is with great pleasure that I here record my thanks to these gentlemen, as well as to the authorities of the various mission schools who co-Operated willingly.

Plan of the Report.

I have divided this report into six sections for the sake of simplicity. In Section 1 I have given a survey of certain general conditions of the area covered by this investigation; Section 2 extends this to the particular towns under consideration. Section 3 gives short descriptions of the type of buildings etc., which are recommended for the area, whereas section 4 deals with the actual recommendations

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The cost of various works was given me by the Executive Engineers of the Public Works Department in Ibadan, Abeokuta and Lagos. Much of this section is necessarily a provisional estimate, as these gentlemen impressed on me the impossibility of giving anything more without the provision of much technical data in connection with the various schemes. All through I have tried to keep the figures at the maximum limit to allow for all contingencies.

I had hoped to include in section 5 an analysis of recurrent expenditure which the above schemes would entail. This turned out to be impossible because the details of the major engineering schemes could not be assessed with a view to upkeep until local conditions were known.

I have added a few photographs. My camera developed a fault which precluded my using it to the extent which I had planned. The prints should be examined with a magnification lens.

A few notes are incorporated in the report on the history and habits of the peoples concerned as without them it may be impossible to understand the psychology behind their reactions to new sanitary conditions, and therefore to appreciate the reasons for the recommendations which I have made.

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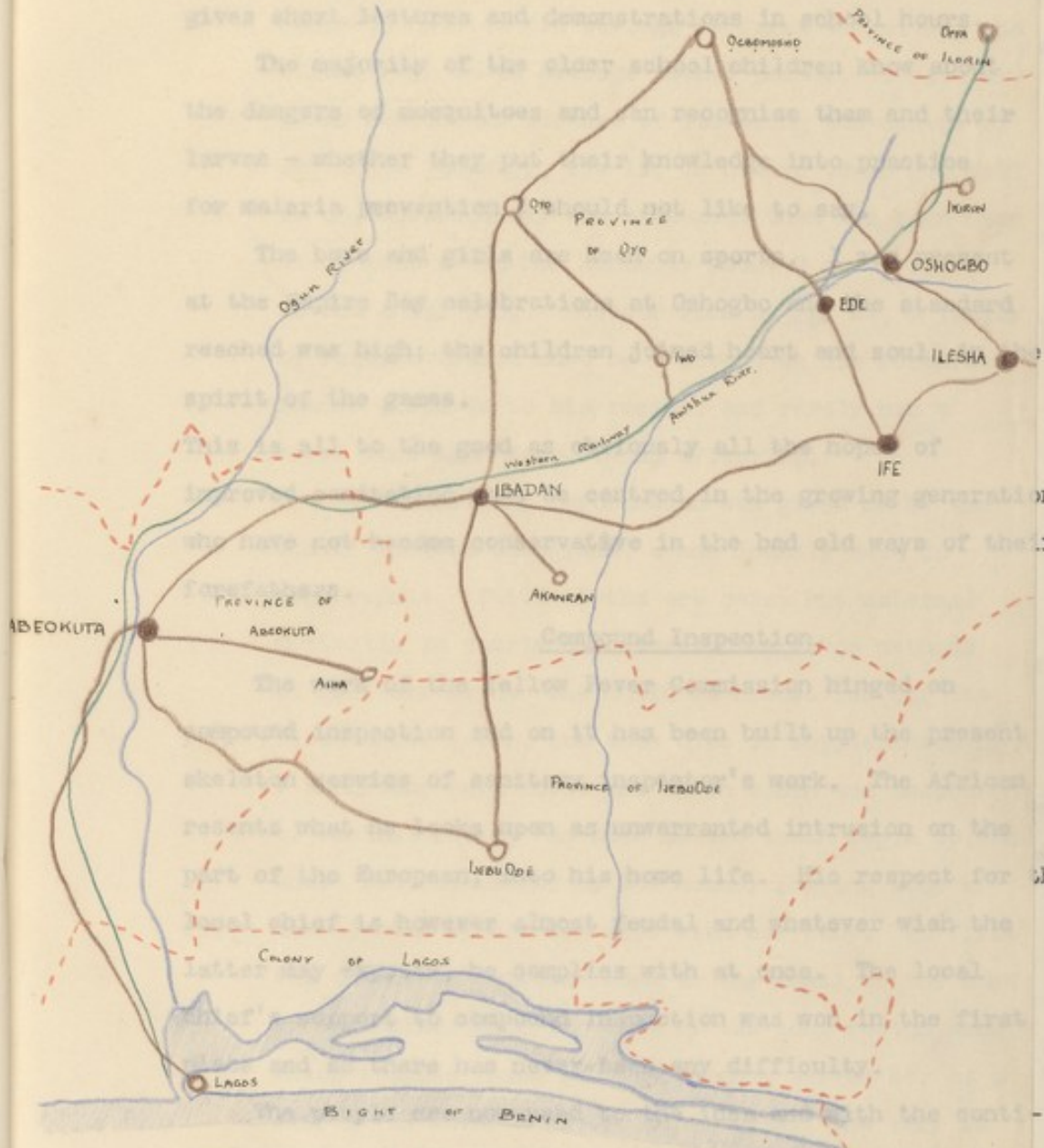
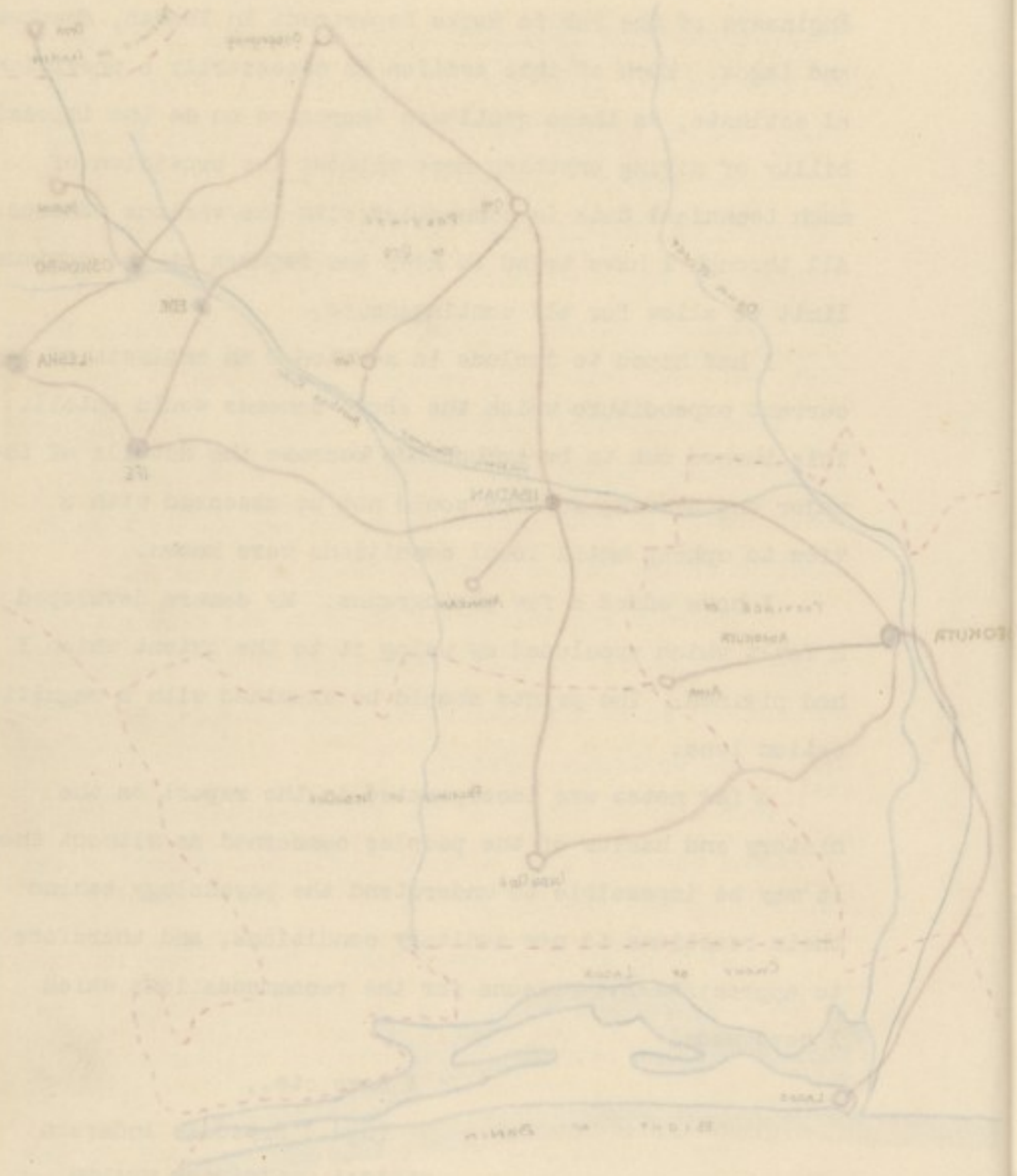


PART OF THE SOUTHWEST OF SOUTHERN NIGERIA

Scale: 1 inch to 15.78 miles.



Section I.

Hygiene Propaganda.

In all mission schools throughout the area a place for hygiene propaganda is found in the curriculum. In Ife, Ilesha, Oshogbo and Ede, the European Sanitary Inspector gives short lectures and demonstrations in school hours.

The majority of the older school children know about the dangers of mosquitoes and can recognise them and their larvae - whether they put their knowledge into practice for malaria prevention I should not like to say.

The boys and girls are keen on sports. I was present at the Empire Day celebrations at Oshogbo and the standard reached was high: the children joined heart and soul in the spirit of the games.

This is all to the good as obviously all the hopes of improved sanitation must be centred in the growing generation who have not become conservative in the bad old ways of their forefathers.

Compound Inspection.

The work of the Yellow Fever Commission hinged on compound inspection and on it has been built up the present skeleton service of sanitary inspector's work. The African resents what he looks upon as unwarranted intrusion on the part of the European, into his home life. His respect for the local chief is however almost feudal and whatever wish the latter may express, he complies with at once. The local chief's support to compound inspection was won in the first place and so there has never been any difficulty.

The people are now used to the idea and with the continued support of the various chiefs there is not likely to be any opposition.

Maternity and Infant Welfare.

As every woman bears a child once in three years between the ages of fifteen and forty-five, this allows

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Section I.(Contd.)

for an average family of ten children. A man of property invests his savings in farms and wives; the latter cost on an average twenty pounds. I have already noted that because of its being the centre of the cocoa industry, Ife is, as native towns go, well to do, consequently the statement that has been made to me that a man has normally about 3 or 4 wives, is not surprising. However rich he may be, a family of forty children must be a strain on his resources. Nature steps in to his rescue, and rarely has a woman more than four living offspring.

The following information was given me by the C.M.S. African clergyman, a man locally held in high repute. Still births are rare, but maternal mortality is fairly high due to the crude methods of delivery used. The child is breast fed for its first three years, but this diet is supplemented by a cornflour pulp about the fifth month and decoctions of various roots. As soon as the teeth begin to come these are encouraged by the mother sharing some of the titbits of her own diet with her baby. At first the infant is carried round in the small of the back of the mother held in place by the long cotton band which wrapped round her many times, serves her as a skirt. As soon as it begins to crawl, the baby is given free use of the house floor and the playground of the yard and streets which it shares with innumerable goats, stray dogs, and other forms of life.

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Vital Statistics.

There is no method in force of gathering particulars as to births, deaths, etc. Children, when they die, are secretly buried during the night in a hole dug in the nearest dunghill. Adults are buried under the houses.

There are very distinct traces in this area of the survival of the religious beliefs of what might be called the early Mediterranean Civilisation. These include the worship of stones in groves (the old fertility cult), the belief in the Supreme Nameless Diety, the taboo on iron, the expectation of reincarnation, the prominence of fire in their system etc.

Adults are buried in a hole which is refilled with earth and a fire placed on top of it. The underlying belief is the old one that the spirit in the grave only waits for a woman to pass over it in order to enter her womb and thus be reincarnated.

By reference back to other religious system elsewhere, the antipathy of the people to have anything like the registration of vital statistics is easily explained. To measure a man with a bit of string, to imprison his shadow, or even to take his photograph, puts him in the power of the person taking the measurement. Invariably this was for the purpose of taking his life. Consequently with these deeply rooted beliefs on burial and on measurement of any sort, I think it will be extremely difficult to establish any complete form of vital statistics for some time to come.

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Section II.

Ife History:

Although in theory British influence has been effective for a considerable time, actually it has been a fact for a little over twenty years.

In 1927 the District Officer reported an epidemic of a disease which the natives did not understand and from which there had been several deaths. This wave of yellow fever was investigated by the Rockefeller Commission and in August 1928 recommendations were made by Dr.G.B.Walker, as a result of which a Sanitary Inspector, Mr.J.Ford, conducted during several months a sanitary campaign directed principally against the mosquito carrier of yellow fever. When he left, routine work was carried on by the staff which he had trained, under the supervision of Mr.G.W.D.Cage, stationed at Oshogbo who visits weekly.

Ife, General Description.

This town has an estimated population of 35,000 and is looked upon as the original home of the Yoruba People, the Ọni being Spiritual Head of all other Yoruba tribal chiefs, and ranked by Government as a 1st Class Chief.
It is situated 56 miles roughly east of Ibadan and lies on the arbitrary line of division of the rain forest and the deciduous forest zones as given by the Nigeria Handbook,
It is joined to Ibadan, Ede, Oshogbo, and Ilesha by good motor roads and the preliminary survey of the branch railway to the Benin area plans for a station.

The town is of more or less the same altitude of 800 ft. and has much the same rainfall and temperature as Ibadan. There are no meteorological statistics kept but the dry weather begins in November and lasts until the end of March during which time it gets progressively hotter. With the onset of the rains, because of the humidity, the heat is more

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noticeable during April but after this it becomes cooler, so that in June and July two blankets are required at night. With the end of the rains, the temperature commences to rise.

The prevailing winds are from the south.

Ife, Geography.

Ife consists of a main town placed on a low hill with what may be loosely termed the suburbs of Ilare, Aiyetoro, and Modakeke, situated on small hills separated from the main town by swampy valleys, respectively, north-east, south and west. The height of these hills is about fifty feet above the swamp level of the valleys. From its nucleus around the King's Market, the town stretches out northwestward for two thirds of a mile along the ridge on which runs the Ibadan road.

The European trading centre, where are the Native Administration Sanitary House and the rest house, is at this north western boundary; Government Hill, the site of the District Officer's House and Office is a quarter of a mile west of Modakeke cross roads.

Two streams run in a northwesterly direction one on either side of the Ibadan road ridge. They run through swamps varying from two hundred yards to a quarter of a mile across.

Thick forest hems in the town, and considerable areas in the township itself consists of neglected secondary bush.

Ife, The People.

Although the 500 year (Ward Price) history of the town is the proud boast of its inhabitants, the level of living appears to have degenerated considerably in historical times. Ife is the centre of the cocoa district and many of the people own farms around the town, which the men cultivate while the women remain in the town, look after the house and family, do their petty trading and generally do most of the work. There is a great surplus of women so that it is quite usual for a man to have four wives. These bear him a child once

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in three years between puberty and menopause, but about 50% of these children die before they reach the age of 15.

Once a person has passed successfully through the risks of childhood, he matures rapidly, soon grows old and then remains an old man for a very long time before he dies of the troubles attendant on senility. This is in spite of the filthy conditions of living; Ife had the reputation of being the dirtiest town for many miles around.

They are pagans and are renowned for their juju. As the result of the work carried on by five Christian Missions in the town, an increasing number are embracing (perhaps only nominally) that faith.
The schools to which fees are paid, are well attended, and where free schools to be started paretns would make no difficulties in sending the children.

Living conditions, as compared with other native towns, are expensive; Ife produces less food than is consumed by its population. More than enough money is made from cocoa trading to allow for importation and there is always enough food to go round in even the largest and poorest family.

Overcrowding occurs in the towns, due less to the number of inhabited rooms per unit area, than to the crowing together into those that exist.

The political system is that of Native Administration, under the Ọni, an inner circle of 8 chiefs appointed by him and also a similar circle of 7 town chiefs of equal authority. There is a native court. Taxation by the N.A. amounted last year to ten shillings and eight pence a head as compared to some eight shillings odd in the much larger town of Ibadan.

Since my visit the Ọni has died.

Modakeke is the home of a separate tribe the Balẹ of which owes allegiance to the Ọni.

An important local industry is that of dyeing. The process is one of soaking certain vegetable matter in water. The material to be dyed is then placed in this infusion for

for

Section II (Contd.)

for

some time and then allowed to drain into another pot. This used dye is kept in yet another pot and is then filtered into still yet another one. This process is carried on in the back yard, and is practised all over the town. As it is continuous, there are always large numbers of these large pots filled with water which because of what it contains, must not be thrown away. Aedes larvae were found in one of them.

Ife, Juju.

One or two points of native religious belief must be considered as having a bearing on any sanitary policy which may be planned for the future.

The area H:16, 17, and 18 contains holy trees and although there is no objection to clearing the undergrowth, the higher trees must not be touched; even in case of the undergrowth it would be advisable to get the Ọni's opinion before clearing at this point were commenced.

The tree-covered hill to the southwest of Aiyetoro is a sacred grove; there is however no reason why this should be interfered with in any way.

In square G:18 is the holy-of-holies which consists of an upright stone surrounded by a few minor blocks.
Once a year the Ọni as head of the Yoruba religion performs high sacrifice to the gods, in the form of the carcases of two dogs. When offered to the stone they may have been dead already four days; the sacrifice remains in place until the decomposed tissues more or less crumble apart. Within 50 yards is an unenclosed meat market.

At the Ọni's command the general population is forced to tackle the problem of smallpox in what to European eyes appears a mystical (or rather, mysterious) manner. In front of each compound in the road are placed two earthenware pots half full of water. These must not be emptied. Into the pot every male in the compound must place a kola nut. Culex eggs have been found in this dirty water. And so the smallpox is stayed.

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Section II (Contd.)

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Ife:

Section II (Contd.)

Ife: Present Water Conditions.

As has been pointed out there are two streams running in a north westerly direction which divide the town from its suburbs. When seen at the commencement of the rains, they were bordered with narrow bands of swamp but I am informed that during and after the rains, these swamps occupy the full breadth of the valley floors and therefore vary from two hundred yards to more than a quarter of a mile across. For about a hundred yards on either side of a road crossing, the stream is out in the open, and on both sides of the culverts are shallow pools used for bathing, laundry and such like household requirements.

These culverts carry roads across the south western stream; they are connected to the valley sides by a laterite embankment which is about three foot at its highest. That these embankments are impeding the drainage of these valleys is demonstrated at this point. Above the culvert at the time of inspection there was very little flow visible entering the pool; below there was a flow of 0.4 miles per hour. During the rains this condition becomes more marked as the valley bed develops into a raging torrent.

Measurements were made on this stream about thirty-six hours after a stiff tornado; after which there had been a hot day of sun. The ground was dry and only a thin belt of swamp bordered the stream, the remainder was firm and dry.

The same remarks apply to the stream between the Ilaro and Ibadan road ridges; in this case the banks in the upper reaches squares H:15; 16, 17, are in some way holy to the religious persuations of the people.

To the south, and south east the ridge stops and the whole town is flanked by a permanent marsh overgrown with dense bush through which meanders an ill defined stream flowing in an easterly and later northerly direction. I am told that this drains through the bush parallel to the Ibadan-Ilesha bye-pass road running northwestwards.

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Section II (Contd.)

Ife: Drainage System.

Although drainage is not included in the terms of reference of this investigation, it is bound up to such an extent with the problems involved that I cannot ignore it.

I have already described the physical geography of the town, but in view of possible development of Government Hill, it should be noted that this is a rise of some hundred feet above the large swamp which separates it from the suburb, of Modakeke. This swamp to the west of the village, is about a quarter of a mile from it, and the summit of the hill a further half mile beyond. The District Officer's Office and Guest House are about half way up the hill, and his house up on the summit.

The present water conditions have already been described. The streams vary from a slow dribble at the end of the dry season, to raging torrents occupying much of the valley bottoms at the height of the rains. There are permanent swamps as shown on the plan, the others being more or less permanent but considerably drier in February and March than at other times.

The formation of the ground is laterite so that during heavy rain considerable erosion occurs in the depressions which drain down from the town along the steeper slopes of the hillsides. This erosion being unequal, pools are bound to occur in the courses of these drains during the rainy season.

In various places in the valley bottoms are solitary pools at present unconnected by outlet or swampy ground with a stream. They are filled with muddy water.

The pond in square K:11 is now about five feet below ground level though it fills to the edge in the rains. That in square H:12 borders the swamp where the hill begins comparatively sharply; the edge of the overflow into the

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The pond in square K:11 is now about five feet below ground level though it fills to the edge in the rains. That in square H:12 borders the swamp where the hill begins comparatively sharply; the edge of the overflow into the swamp

swamp is about three feet above present water level. Pond in square H;14 separated by only a few feet from the stream, is almost full and during the rains is obviously one of its backwaters.

The pond in square E:20 is considerably larger than the others, and is at the foot of a steep bank about twenty feet below road level. It appears to be a clearing in the swamp to the east of the town. It is sheltered by trees, open on the road side, but continuous with the thick swamp growth on the other, and is overgrown with aquatic plants.

There are also a series of ponds formed from borrowpits in the bush in squares L:10 and 11 where an enterprising African has started brickmaking on a small scale. Although on the edge of the swamp, they are on slightly rising ground and are therefore above swamp level even at its wettest.

In F:20 there is the Yoruba Garden of Eden. The story goes that before the earth was made, there was nothing but illimitable sea broken by one solitary sand spit. One day an egg dropped out of heaven on to this bank and out of it hatched a cock. This scratched up the sand and scattered it to such an extent that it silted up larger and larger portions of the sea until only a pond remained. All life is descended from this hard working bird. To the great advantage of the inhabitants of Ife this pond is situated in square F:20.

Needless to say the idea of filling it up is out of the question such action would rank in the native mind with a suggestion to a devout Hindoo to cut down the sacred Baobab tree for conversion into pitprops, or a similar one to a good American to break up the ruins of Glastonbury for road metal. A good deal of tact will be required in approaching the Oni but I have no doubt that by going into the practices connected with the sacred pool, suggestions could be made to him which would be satisfactory both to the spiritual good of his people and to the sanitary conscience of this Department.

There is good reason to believe that this pond is connected by subterranean channel to that in square E:20 so that it

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may be necessary to treat both pools in the same manner. It would be a dreadful event in the native life should the drainage of the pond in square E:20 deprive the Yorubas of their last traces of Eden.

As will be seen from the plan much of this swamp is covered by bush. Beyond squares L:7 and H:9 the bush is so dense as to make it impossible to follow the streams.

Sullage water from the houses, which is not emptied on to the ground, finds its way into the aforementioned street drains. During the dry season, the laterite absorbs the moisture quickly but during the rains, it becomes sodden and forms into thick mud.

During the month of July when the rains are at their highest, the ground everywhere becomes sodden, but should a day of sunshine break the bad weather, the ground dries up at once with the exception of the valleys and drains.

There are many wells in the town, mostly private and a few public, some of the latter of which have been closed. That in square I:11 is on the top of the ridge and the water is at the depth of about twenty feet. The same depth is found in the disused well in square J:13. Both of these wells have proper stone raised edgings and are covered with well fitting wood covers in which there are hinged trap doors. There is nothing to prevent a person using his own receptacle and rope from drawing water from the second well. Water is drawn from the first well by a bucket and rope. The individual stands on the well cover and lowers the bucket into the well and then draws it up hand over fist.

On the whole most of the private wells seen were in good condition, they were properly covered as above, with raised parapets, and mostly with good concrete surrounds; there were however a considerable number of glaring exceptions, with no tops drainage back into the well, and defective parapets. These wells are sunk through the

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solid laterite stone, all of them to depths of over twenty feet.

There are no winches or pumps on any of the wells in the town.

Ife: Water Supply.

Waterworks are being built some two miles north east of the town and it is expected that the supply will become available at the end of this year. The quality of the water is very good chemically and bacteriologically.

It is planned to supply water to some ten or twelve fixed points in the town by means of standpipes. The dam impounds 10 million gallons of water and can give 240 thousand gallons daily during 10½ months and 40 thousand during the remainder of the year. (Allowance must be made on these figures for evaporation.) There is no available estimate at the moment as it has not yet been decided whether to use 6" or 9" pipes on the pipe line.

The supply per year will be 78,200 thousand gallons which give six gallons per head per day.

The probable total cost will be £10, 300 of which the Native Administration voted £5,000 in 1929. This is as the scheme stands at present.

Ife: Conservancy.

The latrine of the African of Ife is the surrounding all-concealing bush. And as in some parts this would entail a journey of a few hundred yards, any thick convenient hedge is made to answer the purpose.

A step in the right direction was taken under Mr.Ford's guidance and pit latrines were put up at a few places for public use. The pit is covered by a wooden lid and is inside a properly constructed mud hut which is fairly fly proof. Unfortunately the users forget to replace the lid, the surrounds of the apperture are frequently fouled and care in shutting the door is not exercised; consequently the latrines breed flies.

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Unlike Ilesha, there are very few salgas, as these latrines are called, inside private compounds. But then Ife has always had a reputation for its filth.

These habits, coupled with the fact of the high incidence of infantile diarrhoeas, dysenteries, etc., form a very cogent reason for bush clearance in the purlieus of the town.

Mr.Cage has recently been tackling the salga problem with the result that they are increasing. His instructions have been to dig a salga in each compound but in various places, a block of compounds has united together, and is digging a large communal pit in waste ground in the middle of the block. These are all steps in the right direction. About five had been constructed at the time of inspection and double that number were being built.

Ife: Schools.

All the schools are run by Christian Missions; of these the Church Missionary Society has four, the Baptist Mission one the Salvation Army one, the Roman Catholic Mission one and the Wesleyan Mission one.

As judged by the C.M.S.Schools there is a 75% attendance but of these 25% absentees, about half only are sick, the remainder being absent working on their parents farms. This gives a sick percentage of 12½% of children suffering from ailments sufficiently serious to keep them away from school. As there is no Medical Officer in the town there is no inspection.

Ife: Sanitary Personnel and their Duties.

This consists of the staff given below:-

1 Sanitary Inspector	£2.10. 0	a month
3 Assistant Inspectors	1.10. 0	" each
1 Trained Headman	1.10. 0	"
6 Labourers	0.17. 6	" each

Native Administration supply six labourers in addition.

These are permanent; as extra labour is required, the Native Administration is informed and supplies it for

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the time only.

The town is divided into three Sanitary areas; A is the third to the north of the King's Market, bounded on the west by the Ibadan Road (here called Iremo St.); and to the south by the road connecting the market to the cross roads in square D:19; B is to the west of the market, bounded to the east by the Ibadan road and to the south by a straight line joining the C.M.S.School in M:18 to the southern wall of the Oni's palace; C is all the area to the south of the first two.

One assistant is in charge of each area and the Sanitary Inspector supervises them all. The incinerator men attend to the incinerators.

The duties of the inspectors are to enter compounds supervise water tidiness, and check nuisances. At the initiation of the campaign under Mr.Ford when the object was mainly the suppression of the yellow fever vector attention was directed to the keeping empty of all the hundred and one pots that lie about all premises. If not attention was paid to the repeated warnings, heads of offending compounds were sued before the local courts and fined ten shillings. This had the desired effect at the time. Borrow pits in compounds were ordered to be filled in, and non-compliance meant filling in by the Inspector's labour and charging up the cost to the compound head. These are still in theory the duties of the inspectors but as there are only three of them for a population of 35 thousand persons, it will be understood why the sanitary conditions of Ife are unsatisfactory even though these men discharge their duties as well as they do.

All that can be done is to pay surprise visits and revisits when necessary. Persistent offenders are now reported to the Ward Chief who deals with them in his own way. One is largely handicapped by the lack of interest in sanitation of these chiefs.

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From the sanitary point of view this method has proved unsatisfactory.

From what I have been able to see, all mosquito control is directed against the Aedes and the presence of Anopheles is ignored.

The inspectors do not vaccinate.

Ife: Infectious Diseases.

From the recent work of the commission of the Rockefeller Foundation, it appears that yellow fever is rife but that the African has established such a racial immunity to it that it is rarely more than a mild disease. Unfortunately the limelight which has been thrown on this mosquito borne fever has diverted attention from the other, malaria. The few Europeans, although they take their five grains of quinine regularly, when they get bitten in the cool of the evening on their verandahs, remark on the sand flies. There are chironomids and many of them, but there are also A.gambiae, I was fortunate enough to catch one as it settled on myself.

Small pox is very prevalent, especially in the dry season as is pneumonia.

As I have reported above, there is a good deal of infantile paralysis.

Perhaps cerebro-spinal meningitis may be included under the "convulsions", there is an obscure account of what appear to be fits after a child gets over fever.

Other Diseases. I have seen two cases of elephantiasis in the streets, both of the leg. This points to a fair incidence of Filariasis. According to the C.M.S.Clergyman there is a considerable amount of Ascariasis also.

Ife: Compound Inspection.

Before intensifying it, as it is suggested should be done in the recommendations below, the position should once more be put before the Oni in detail and renewed support obtained. In connection with reported defaults found in compounds, the Provincial Resident is not in favour that

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Ife: Vital Statistics.

The European is naturally not encouraged to meddle in these matters. Recently in Ife the late Oni's eldest son, both father and son educated men, was known to be ill. On enquiry he was said to be not very ill, and the offer of medical assistance was declined. Even on the morning of his death kind enquiries elicitated the information that he was better. He died of virulent smallpox. If this is the attitude of the educated person, the average townsman is going to be difficult to handle.

There is the beginning of a turn towards European medicine. Clergymen have an elementary knowledge and are often called in for advice; this attitude can be developed.

Ife: Mosquito Larval Survey.

A short mosquito larval survey was carried out. As time pressed it was not possible to give more than a day to this but it would be advisable to do it properly at some later date as some interesting questions have arisen such as why larvae are found in great quantities in an overgrown pond and yet are absent from what appears to be an exactly similar pond within a hundred yards. Fish may explain it but I think the reason is not supplied by these.

In general it was found that larvae were absent in the streams themselves, were scantily present in the little backwaters under the weeds, fairly abundant in ponds which were more or less clean, and very abundant in those which were dirty and in the swamp puddles.

Culex preponderated in the dirty ponds and puddles Aedes in the cleaner ones, and Anopheles in the backwaters and to a certain extent in the clean ponds.

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Section II (Contd.)

action should be taken directly by summons to the Court, but rather that the offender should be reported to the Ward Chief to be dealt with by him. This procedure is at present working satisfactorily as long as the Ward Chief is continually prodded by complaints to the Ofi.

Ife: Vital Statistics.

European is naturally not encouraged to meddle in these matters. Recently in Ife the late Oni's eldest son, both father and son educated men, was known to be ill. On enquiry he was said to be not very ill, and the offer of medical assistance was declined. Even on the morning of his death kind enquiries elicited the information that he was better. He died of virulent smallpox. If this is the attitude of educated person, the average townsman is going to be difficult to handle.

There is the beginning of a turn towards European medicine. Clergymen have an elementary knowledge and are often called in for advice; this attitude can be developed.

Ife: Mosquito Larval Survey.

A short mosquito larval survey was carried out. As time pressed it was not possible to give more than a day to this but it would be advisable to do it properly at some later date as some interesting questions have arisen such as why larvae are found in great quantities in an overgrown pond and yet are absent from what appears to be an exactly similar pond within a hundred yards. Fish may explain it but I think the reason is not supplied by these.

In general it was found that larvae were absent in the extreme themselves, were scantily present in the little backwaters under the weeds, fairly abundant in ponds which were more or less clean, and very abundant in those which were dirty and in the swamp puddles.

Culex preponderated in the dirty ponds and puddles Aedes in the cleaner ones, and Anopheles in the backwaters and to a certain extent in the clean ponds.

Section II (Contd.)

All larvae were examined at once on catching, with a microscope (1/6 power) but unfortunately owing to the nature of the work only a rough classification could be made.

Both A.gambiae and A.funestus were found in the streams, the former especially in the more grass grown and dirty portions.

A house to house larval survey was not attempted. As I went round the compounds for other purposes I here and there examined the water in the many pots, and found considerable numbers. As the larvae still persist I see no reason to suppose that they have changed in the houses and compounds since the Rockefeller Foundation carried on their work in the town.

I append a list of spots where larvae were found:

Square H:11	Pond above culvert	Culex
	Pond below culvert	Culex
H:12	Marsh	~~Aedes~~ Anopheles
	Borrow pit	Culex
H:13	Artificial pond	Anopheles & Culex
R: 8	Borrow Pit at road side	Culex
L:11	Brickfield ponds	Aedes & Culex
O:12	Stream backwater	Anopheles
	Marsh puddle	Culex
M:17	Marsh pond	~~Aedes~~ Anopheles
	Stream backwater	Anopheles
E:19	Overgrown pond	Culex

On an average four out of every five dippings were negative and include points on the streams, backwaters and ponds other than those recording as positive above.

On the plan the red letters represent the above findings, A representing Anopheles, S Aedes, and C Culex.

Note:

In the latest publication of the Yellow Fever Commission, the Stegomyia aegypti is spoken of. This body is always most careful in its terminology and one is therefore led to suppose that this is now the latest and correct method of referring to what has been called the Aedes aegypti. As however the new name is hardly known I have retained the older one in this report

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SECTION II. (Contd)

ILESHA: HISTORY.

The history of Ilesha under effective British rule dates back some twenty odd years. In 1928 it was investigated by the Rockefeller Commission as the result of the Yellow Fever survey which had started in Ife being extended to the surrounding towns.

Dr. B.G.J. Elmes, Medical Officer of Oshogbo at the time, reported on the Sanitary condition of the town and made recommendations, and was followed very shortly by Mr. J. Ford, Sanitary Inspector of the same place, who besides making additional recommendations, carried out the work. Routine work has been carried on by a small staff of native inspectors under the supervision of Mr. G.W.D. Cage who makes a weekly visit from Oshogbo.

ILESHA: GENERAL DESCRIPTION.

The town is one of the bigger towns of the Yoruba nation and is populated by the Ijesha branch of this people. The Owa through whose Native Administration, the town is ruled, is ranked by Government as a Second Class Chief and has for his titular head, the Oni of Ife; he is the holder of the Sacred Sword from Ife.

It is situated 75 miles a little north of east of Ibadan, and 20 south east of Oshogbo, the nearest railway station. Good motor roads join it to those two towns and also to Benin via Ondo.

Ilesha is at an altitude of 1200 feet and the country although mostly rain forest covering rolling shallow valleys and slight rises, is broken every here and there by abrupt hills up to 17 or 18 hundred feet which become more frequent as the Ondo Highlands are approached fifteen miles to the East.

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SECTION II. (Contd)

Although no meteorological statistics are kept, the rainfall is well below 45 inches a year, and its monthly distribution is of much the same character as that of Ibadan. The average temperature is also somewhat less; the rains last from the end of March to the end of October.

ILESHA: GEOGRAPHY.

Ilesha is a more compact town than is Ife. Through the heart of it stretches from east to west a continuous ridge along the eastern continuation of which runs the Akure-Benin road. On a slight southern spur stands the Afin, the centre of the town. A swampy valley separates the main town from the south western suburb of Okenyi through which the Ife-Ibadan road enters, and the southern village of Ishona on the Warra road. Both of these roads after crossing the valley rise into these villages.

The town stretches slightly less than a mile each way from the Afin except to the south, where the distance is about half this.

To the north the town has grown along the Oshogbo road where, on the border of the town-boundary is the rest house.

The Wesleyan Hospital, is at a corresponding spot on the Ijebu-Ijesa road which bisects the angles of the Oshogbo and Akure-Benin roads.

The main stream, the Ora running from south-east to north-west receives minor branches (1) from a short valley running up into the heart of the town between Igbogi and the Afin (2) From a similar valley south of the Afin running towards Okessa, and (3) from the swampy bush between Ishona and Okenyi. Another streams skirts the town to the north east and receives a short branch from between Orinkiran and Ijoka.

The town is surrounded by thick bush.

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ILESHA.

SECTION II. (Contd)

ILESHA: THE PEOPLE.

The remarks about the people of Ife are applicable to those of Ilesha with one remarkable exception; they are, as the Yorubas go, a clean race. The cleanliness shows itself in several ways; although house refuse is not taken to the incinerator (after all there is only one in the town) it is often collected into a neat little pile in the street gutter outside the compound and set light to.

The people make no difficulty about making pit latrines, when told to build one, they get on with it without endless prodding and evasions. The private salga is usual instead of being a rarity as it is in Ife.

There are not nearly so many houses in various advanced stages of deserted disintegration; there are many more corrugated iron roofs, a sure sign of wealth backed by a sanitary conscience.

The Ileshan women only loses thirty per cent of her off-spring against the fifty of the matron of Ife.

Ilesha is to a minor degree a centre for the sale of cotton, cocoa, and palm kernals and the inhabitants are well to do, there being no real want amongst them.
Unlike Ife enough food is produced to feed the people so that the cost of living is fairly moderate.

The problem of the dye industry in its relation to mosquito breeding exists here; it is fully discussed in the report on Ife.

The political system is that of the Native Administration presided over by the Owa, an energetic and most enlightened individual. The town is divided into six wards (all marked on the plan; N.B. Okenyi is part of the Ishona ward). Each ward is presided over by a chief man who is directly responsible to the Owa. All chief men appoint subordinates who in

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turn rule in a small portion of the ward.

Taxation amounted last year to ten shillings and five pence per male adult.

The people are mostly fetish worshippers though they send their children to the Christian Missionary schools of which there are three first class societies with large establishments in the town. Acceptance of the dogma of the particular sect is a sine-qua-non, but in order to get the education for their children, parents are quite ready to allow this. When they have got all they want out of the white man, they can always go back to the true fetish of their own faith; so appears to run the native mentality.

ILESHA: PRESENT WATER CONDITIONS.

The main stream, the Ora, runs in an irregularly straight line from square A:12 to J:14. In squares A,B,C and D:13 it is permanent swamp much of it overgrown with secondary bush. In D:13 however this belt is only a hundred yards across whereas in the other squares it extends up to three hundred.

At the Ibadan road it receives a tributary from the south which is dry during part of the year. It is overgrown with primary jungle. From the road to square H:14 it is a broad permanent swamp overgrown with secondary jungle, but from the point where the minor streams from the Igbogi-Afin valley come in it runs in a fairly deep and well defined channel through secondary bush. I did not trace it beyond square J:15 where it disappears into primary bush.

An important tributary runs down the Ereja-Ishona valley through the heart of the town. The valley is open in D:12 but higher up is overgrown with secondary bush.
I say important because for its short length it carries a surprising amount of water.

The two streams in the Igbogi-Afin valley are dry for

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part of the year but run throughout their lengths through secondary bush, which becomes a swamp during the rains.

In square F:8 is a spring draining ~~xxx~~ northeast to join another which emerges from the bush in D:14 and disappears again in G:2. The spring drain dries up for part of the year although I am told there is always water in the spring itself. The valley through which it drains is secondary bush in F:6 and primary in F:4.

Ilesha: Drainage.

The formation of the ground is laterite though there occurs a small deposit of gray claylike material along the bed of the stream in O:1.

Considerable erosion has therefore taken place along the sides of roads into the Igbogi-Afin and the Ereja-Ishona valleys. In the centre of the town there are good concrete gutters for short distances along the roadsides; the only criticism I have to make about these admirable pieces of work are that although of good depth, their cross section is that of a parallelogram and unless the water carried is sufficient, they are not self cleansing; an elliptical cross-section would have got over this trouble.

The two valleys referred to above drain badly and although not actually waterlogged, are dangerous. The Ereja-Ishona one has the water table so near the surface that even during the dry season, if shallow ditches are dug for the foundations of a native house, the water is uncovered; Needless to say during the rains it is a swamp. In spite of this, because of its proximity to the centre of the town and the lack of bush in upper D:12 and lower C:11, houses are bult on this saturated ground.

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Sullage

SECTION II. (Contd).

Sullage water is thrown on to the ground into which it soaks or drains down the small erosions in the hillside to the nearest swamp.

There is a stream crossing the Oshogbo road in what would be square O:1 and I am told that it runs in an westerly direction through a swamp in the primary bush; this I have been unable to verify for myself. Anyhow this stream appears to be over half a mile from any dwelling place and is therefore unimportant.

Drinking water and water for washing purposes is derived entirely from wells. Except in the valleys, the water table varies from ten to twenty five feet below the surface. Wells on the whole are well constructed, most of them being properly covered with a two-foot parapet and a considerable number with a proper concrete surround draining away from the well.

Unfortunabely as in Ife, the idea of a winch or a pump has not occurred to the people and the water is drawn by rope and bucket (which is generally in good repair and clean).

The Native Administration placed on one side the sum of £500 for waterworks with a view to utilising the spring in square F:8 but on investigation it was found that the supply would not be constant during the dry season.

ILESHA: CONSERVANCY.

The pit latrine is used on a large scale in the town, the large majority of the compounds having dug properly designed salgas. There are of course some compounds which have not as yet done the work, but unlike Ife they are in the small minority.

The bush is used to a certain extent but compared to Ife, only to a very small extent. This is probably due to the number of private pits, the relatively small area of bush in the town and the cleaner habits of the townsmen.

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Mr. Cage is about to instal a public pit latrine in the King's Market area (E:11) and combine it with an incinerator; it will be in reality a smoke latrine. The combination will save the work of one labourer.

ILESHA: REFUSE DISPOSAL.

There is one bush type incinerator in square D:11. otherwise there is really no system of refuse disposal in the town. The people often clean out their compounds, and make a little heap of the refuse in the street, and set light to it, which is all to the good. Where the bush is available old tins etc. are deposited in the nearest convenient spot. This nuisance is not on the same scale as in Ife mainly because there is considerably less bush.

ILESHA: SLAUGHTER SLABS AND MEAT MARKETS.

A slaughter slab was built near the incinerator in square D:11 but it was speedily condemned because of it being in the centre of the town and because drainage percolated directly into the stream in the valley, a hundred yards away.

A new one was built to the south of the road in square A:6 with proper surface and drainage into cesspits which as they become filled, are filled in with earth. A permanent concrete pit is projected into which all fluids and offal will be placed, and after the killing, will be taken out from it and buried in the surrounding ground.

Animals are inspected the night before slaughter and again immediately after. The responsibility remains with the butcher to notify the inspector, and also to leave the slab in a sanitary and clean condition afterwards.

There is one meat market in the King's Market in square E:11. At the moment it simply consists of a corrugated iron roof supported on a few wooden uprights.

Measures

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Measures are in hand to pave it with concrete and a proper drain which will empty into disused well which will be filled in as a soak pit. A wooden skirting three foot high is to be added and a rail down the middle of the roof from which meat may be hung.

ILESHA: SCHOOLS.

As has been pointed out the schools are entirely under mission control. There are four large ones and one or two smaller ones. Thus there are over four hundred children at the Wesleyan School. School attendance is on an average 70% of the children on the registers, the principle cause of non-attendance being work on farms.

ILESHA: SANITARY PERSONNEL AND THEIR DUTIES.

The staff consists of :-

1	Sanitary Inspector	£2.10.0 a month
3	Sanitary Inspectors	1.10.0 a month
1	Headman	1.10.0 a month
11	Labourers	0.17.6 a month
1	Incinerator man supplied by Native Administration.	

The town is divided into three sanitary areas; area A is to the north of the Igbogi main street and west of the Oshogbo road; area B is to the east of the Oshogbo road and north of the Akure-Benin road; and area C is to the south of the Igbogi main street and the Akure-Benin road. Each area is in charge of an inspector and in addition the Chief Inspector supervises the other two.

Unfortunately the Sanitary Inspection side of the work has fallen into the background and vaccination holds the principle place in the thoughts of these men; this in spite of the constant supervision of Mr. Cage.

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SECTION II. (Contd)

also stop anyone in the street and vaccinate. More than 70% are seen a second time after vaccination and of these about 75% have "taken".

In spite of representations to the Native Administration one of the men engaged for the work is illiterate, consequently there are no statistics on this important work. This lack should be put right at the earliest opportunity as half the value disappears under the present circumstances.

In cases of small-pox, all contacts are traced (if possible), are vaccinated and isolated for a fortnight.

ILESHA: THE WESLEYAN MISSION HOSPITAL.

The Hospital is ~~ix~~ situated on the Ijebu-Ijessa road in square 1:5. It has been established for more than twenty years although there have been periods when through lack of staff it has been temporarily closed.

Dr. A.E. Hunter, M.B., B.S.(London) is in charge and very shortly will be assisted by another medical man from England, There are two European Sisters of whom Miss Ludlow, has been trained in Dublin and has obtained her C.M.B. diploma from the Rotunda. The African Staff of nurses, laboratory assistants, etc; are trained in the hospital.

There are two wards of twelve beds each, one male and the other female, operation theatres, dressing rooms, eye-examination room, labour room and laboratory. The whole institution is equipped in an up-to-date manner and at the time of my visit a petrol-electric system of electricity and ice-supply was being installed.

Although there are comparatively few beds, the out-patient work is on a considerable scale and the clinical findings are checked by bacteriological and pathological methods.

There is a separate maternity and child welfare department to which reference is made more fully under that heading.

SECTION II. (Contd)

also stop anyone in the street and vaccinate. More than 70% are seen a second time after vaccination and of these about 75% have "taken".

In spite of representations to the Native Administration one of the men engaged for the work is illiterate, consequently there are no statistics on this important work. This lack should be put right at the earliest opportunity as half the value disappears under the present circumstances.

In cases of small-pox, all contacts are traced (if possible), are vaccinated and isolated for a fortnight.

ILESHA: THE WESLEYAN MISSION HOSPITAL.

The Hospital is xx situated on the Ijebu-Ijesas road in square I:5. It has been established for more than twenty years although there have been periods when through lack of staff it has been temporarily closed.

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There is a separate maternity and child welfare department to which reference is made more fully under that heading.

Section II. (Contd.)

Last year Government made a grant in aid to this institution of £950.

Ilesha: Maternity and Infant Welfare.

In the main the conditions governing this are the same in Ilesha as in Ife with one or two modifying factors. The price of a wife has been fixed by the Native Administration at £12.10/- but the average number per man remains at four. Childbirth is only allowed by native custom once every three years during the fertile period. Thus a woman's offspring numbers about ten. Owing probably to the greater cleanliness of Ilesha and the cleaner outlook on life in general of the people nature only kills off thirty per cent of the family. A man's household is therefore larger than it would be were he to live in Ife.

The treatment an infant receives is much the same in both places, consequently the diarrhoea and dysenteries are also important factors in this town.

A very encouraging straw in the wind is the development of the Maternity and Infant Welfare department of the Wesleyan Hospital. This has only been started in the last few months by Miss Ludlow but the attendances are increasing and mothers make repeated visits. Babies are weighed and given simple tr treatments; elementary advice is given to the mothers.

Unfortunately owing to the lack of staff and time, this work has not been extended to classes for mothers, or to home visiting. Should the staff be augmented it is intended to take in this work as well.

Infant mortality is high according to Dr.Hunter, the principle causes being tetanus neo-natorum and diarrhoea and vomiting. The greatest mortality is during the first twelve months but child mortality is high up to 5 years.

ILESHA: SCHOOL INSPECTION

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ILESHA: SCHOOL INSPECTION

Section II. (Contd.)

Ilesha: School Inspection.

Thanks to the kindness of Dr.Hunter who lent me the materials and gave me full use of his laboratory, I was enabled to make an inspection of the faeces and the bloods in the schools. For this purpose I chose the large Wesleyan school as being typical and limited myself to the junior classes, i.e. ages four to ten or eleven.

While the samples were very small owing to the lack of time to go into the matter properly, the results yield indications; it must be remembered that they are but indications and therefore cannot be expressed as statistical percentages. The actual material was thoroughly examined; an average of a quarter an hour was given to searching each blood film and about ten minutes to each foeces.

Ten foeces were examined by the fresh iodene method. The results are:-

1. Schistosome, Ankylostome.
2. Ankylostome.
3. Taenia, Ankylostome.
4. Ankylostome, ascaris.
5. Schistosome, Ankylostome, ascaris.
6. Ankylostome.
7. Ascaris, Taenia.
8. Ascaris.
9. Schistosome, Ankylostome.
10. Ankylostome.

There was no method available for taking the urines to hospital to be centrifuged so examinations were not made.

Of the blood taken from the quick of the index fingers and stained by the Geimsa thick film method, forty-four were examined. Forty-one showed the malarial parasite, two showed Trypanosoma gambiense but none showed microfilaria in spite of the prevalence of loa infection as discovered in hospital patients.

One hundred children were palpated for enlarged spleens; of these thirty-one could be felt. The enlargement was not great and rarely amounted to more than one finger's breadth below the costal margin. There were only two in which the

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notch was in the region of the umbilicus.

Dr.Hunter states that all infants have enlarged spleens within a few months of birth but that they shrink during the first two years. This would bear out the other evidence of the prevalence of malaria here, such as the breeding of A.gambiae, and the high parasite index. It raises the question whether West Africa is actually different to the rest of the world in that a high degree of infection is not accompanied by a high spleen index. The question shifts from this, to what causes the spleen to shrink again in early life while the parasite index remains.

Ilesha: Infectious and other Diseases.

Small-pox occurs in small epidemics and is particularly serious during the dry weather. Chicken pox and measles also are common but the latter rarely leads to anything more serious than a chronic bronchitis which clears up with time. Whooping cough is a continual trouble as the meaning of isolation for it is not understood by the native. It is not however of the killing type. Dr.Hunter who has supplied me with most of my information of the prevalent diseases, has noted that the text book rarity of haemoptysis occurs in fifty per cent of the whooping cough cases in whom there is not the possibility of tuberculosis.

Pneumonia is common at all periods of life especially during the dry season. There is no diphtheria (I note this in connection with the "white tongue disease" of Ife). Infantile paralysis occurs and I was shown an actual case which had the full history.

There is enough leprosy for the hospital to have a weekly leprosy clinic. I saw an advanced case of rodent ulcer although malignant new growth is very rare.

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Section II. (Contd.)

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Section II. (Contd.)

There is said to be relapsing fever but Dr.Hunter had not seen any himself.

Malaria, ankylostomiasis, filariasis and ascariasis are universal but no yellow fever had been noted up to date. Amoebic dysentery is common and cases of amoebic hepatitis have been treated in the Hospital. Although there had been no cases of sleeping sickness, I was able to demonstrate Trypanosoma gambiensis (long forms) in two bloods examined. Bilharzia is also very common.

Yaws, gonorrhoea and leucorheoa are frequently met with but rarely syphilis.

Compound Inspection.

There is no difficulty in compound inspection in Ilesha at all. The people have a fair appreciation of what we are driving at and are led by the Owa, who is almost European in his outlook on sanitary matters.

In spite of this there is a lot of water untidiness; a certain amount appears to be inevitable when one considers the paramount importance which the earthenware pot assumes in the native household. These are left lying about and gather water; the native does not appreciate that a small dribble in the bottom of a clean pot will breed mosquitoes just as certainly and just as deadly, as a large pot kept filled with stale water.

As in Ife we are up against the native industry of indigo dying which involves numberless pots containing various brews which by the nature of the process, must be left out in the open to ripen. Otherwise they do not acquire their necessary potency. This is all that I can gather about it as the process is a secret jealously guarded from the white man.

Several water pots which were examined during my tour of a few compounds were found to be breeding Aedes and Culex.

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Section II. (Contd.)

Ilesha: Mosquito Larval Survey.

It was possible to give a day to a survey of the swamps and streams around the town. Although considerably less of the dippings yielded positive results as compared to Ife, the actual results are more significant as the preponderance of Culex of the latter was absent, but A.gambiae was found breeding in the heart of the town.

As a general result Anopheles was not discovered in any water where the shade was fairly dense or where the stream was clear cut and of a fair current. They were found out in the open along the slightly swampy border of the Ereja-Ishoma valley the conditions of which seem to invite the native to build at this spot.

Culex was found in the filthy water of the permanent evergrown swamp situated at the backdoors of Okenyi.

No Aedes were found in the swamps at all.

The same criteria in examining the larvae as were used at Ife, were employed here.

The following is a list of the positive dippings:-

Square C:10	Grass grown stream edge	A.gambiae.
	Compound pond	~~Aedes.~~ Anopheles
C:11	Grass grown stream edge	A.funestus
D:12	Foundation ditches	A.gambiae.
E:14	Grass grown stream	* see note
F:14	Dirty swamp pool	Culex.

Negative dippings in addition to the above places were made in squares H:12, 13, & 14, D:14, F:5 and 6.

*Note. This larva escaped before I got it on to a slide for microscopic examination. From its position at the water surface it was an Anopheles.

Ilesha: Vital Statistics.

As in Ife there are no means of arriving at these, and for the same reasons given for that town, they will not be available for some time to come.

Mr.H.L.Ward Price

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Section II. (Contd.)

Mr.H.L.Ward Price, when District Officer in Ilesha in 1927, gave the population at 25,000 but the present estimate is nearer 50,000.

Infantile mortality is not so high as in Ife.

Hospital records are not reliable indicators as very rarely does a person know his own age when he has passed out of adolescence. Even when he does, the Yoruba method of computing the calendar is so incompatible with our own, that in the process of conversion from one to the other, the statement becomes highly inaccurate. Only when shortly past the manopause can one guess at a woman's age as so much past forty-five.

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Section II (Contd.)

Oshogbo: History.

In the latter half of last century Ọyọ was the headquarters of the military power with outposts at Ibadan, Oshogbo, etc. During the last decade of that century British intervention brought peace and the disbanding of the armies. The military camps formed the nuclei of townships. When the railway was built the town of old Oshogbo was abandoned and the present town built a few miles further west on the railway line.

In 1924 a Medical Officer was appointed and a dispensary was opened but it was not until 1927 that it was realised how filthy the place was. Attention was focused on the town by the outbreak in that year of yellow fever with the death of two Europeans. Since then a considerable amount of cleaning up has been going on first under the European Sanitary Inspector Mr.Ford and now by his successor Mr.Cage who has started a small school for the training of African Inspectors.

In 1929, the Dispensary was closed and the present African Hospital opened by the Medical Officer, Dr.D.C.Bell.

Oshogbo: Geography.

The town is on the Iddo-Kano line of the Nigerian Railway between the mileposts 182 and 183. It is almost due south of Ilorin and due east of Ọyọ and lies in the deciduous forest belt, at a height of 1000 ft.

It is situated on a low irregular hill above the Awshun River on its left bank. The river is to the west of the town, and to its north and south run two small tributary streams. Both of which consist during the dry season of nothing but intermittant stretches of grass and reed-grown swamp with stagnant water holes.

The railway follows the line of the former stream, and the station is situated in square O:7.

The

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Section II (Contd.)

The town itself centres round the Afin and the King's Market in squares N: and M:15 from which it radiates south along the Ilesha road, west down to the valley of the river, north to the European Reservations in the vicinity of the railway station, and east along the Ikirun bye pass road.

The Ede-Ibadan and the Ọgbọmọshọ roads join and enter the town to the east of the station at which point they are joined by the Ikirun road which skirts the east of the town. In the angle between it and the Ikirun bye pass road (N:19 to B:13) is the Hausa reservation.

The town is divided into several quarters, all of which are named on the plan.

Oshogbo: General Description.

The country lies in the deciduous belt and is covered with a much more open form of bush than are Ife and Ilesha. It is characterised by palm trees, low undergrowth and high grass.

The underlying ground formation is of laterite intermixed with a large amount of a soft red stone containing mica (I have not been able to find out its nature). Through this at certain points crops out hard grey granite. Denuded of its vegetation the surface is very easily eroded. This has taken place in the town proper which is built on a hill.

Although the rainfall is less than 45 inches a year, it is concentrated into an even shorter period in the middle months than is the case with Ife and Ilesha. Consequently, when it does rain, it rains heavily and the friable ground on which the houses are built washes away easily. As the harder stone crops up at the surface and as the overlying smaller stuff is carried away many pools are formed in the heart of the town.

I have seen house drains which have eaten back to such an extent that the house wall has collapsed and has had to be rebuilt considerably further back.

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Section II. (Contd.)

The town has literally risen out of the mud on which it stands and the numberless borrowpits form a sanitary problem. It is a punishable offence to dig these without previous permission but in spite of this there are always new ones appearing overnight.

Unlike Ife and Ilesha, there are no roads other than the few main ones marked on the plan. The houses have been dumped down without any relation to their neighbours and the public paths wander about haphazard between the walls of the compounds, sometimes as narrow four foot passages almost roofed in by the overhanging eaves on either side, sometimes as broad sandy open spaces with a few bushes or trees in the centre, and sometimes as the waste space on either side of a shallow drain.

Inhabited houses exist cheek by jown with abandoned ruins: because of the dead buried under the ruins nobody other than the family will build upon them as no one wants the ancestor of another family reincarnated in his own. Ruins may not be rebuilt for a considerable time as the owner may not consider it an economic proposition to restore the old house for the time being.

Oshogbo: The people.

As has been noted Oshogbo grew from the military outpost of the vicinity under the central power at Ọyọ. The people still maintain this distinction and term other Yorubas in the town as foreigners.

The ruler of the town is the Ataoja supported by the chiefs of the several quarters into which Oshogbo is divided. Although owing spiritual allegiance to the Ọni of Ife, he comes directly under the Alafin of Oyo.

Government is by Native Administration assisted by the District Officer who has had considerable difficulty in preventing the Ataoja's continual return to the comfortable

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Osinogbo: The people.

As has been noted Osinogbo grew from the military outpost of the vicinity under the central power at Oyo.

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The ruler of the town is the Absota supported by the chiefs of the several quarters into which Osinogbo is divided. Although owing spiritual allegiance to the Ooni of Ife, he comes directly under the Alafin of Oyo.

Government is by Native Administration assisted by the District Officer who has had considerable difficulty in preventing the Absota's continual return to the comfortable state

Section II. (Contd.)

state of "Mañana" in anything which does not directly affect his personal comfort or well-being.

The people are developing a sanitary conscience; this has been a slow process but having seen the lack of it elsewhere it is definitely there when one comes to Oshogbo. It is true that the individual has to be constantly prodded to get anything done but I think that this is so apparent only because of the little support that the Sanitary Inspector gets from the quarter chiefs; it is not politic to be for ever dragging offending compound heads into court. Ilesha provides the object lesson of how easy town sanitation is when it has the whole-hearted support of the ruler and the chiefs of the town.

Oshogbo is one of the smaller centres of the cocoa, cotton and palm kernel industries. Much of its importance has been derived in the immediate past from the road connecting the main district of these industries to the south, with the railway. A ginnery is in full swing near the station.

But the Ife-Ede road has already diverted a considerable amount of trade to Ede, and the growing excellence of motor transport is tending to shift the emphasis from Oshogbo to Ilesha. If the projected branch railway into the Benin area is built, much of Oshogbo's present importance will be gone.

At present the town is comparatively well off with its population of about 50 thousand. The male tax last year was six shillings a head. With incomes over £30 p.a. a tax of 2½% was levied. Enough food is grown in the immediate vicinity to feed the population so that there exists no actual want.

The situation as regards purchase of wives, size of family is much the same as in Ilesha except that the

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At present the town is comparatively well off with its population of about 30 thousand. The male tax last year was six shillings a head. With incomes over £30 p.a. a tax of 2½% was levied. Enough food is grown in the immediate vicinity to feed the population so that there exists no actual want.

The situation as regards purchase of wives, size of family is much the same as in Ilesha except that the intent

Section II. (Contd.)

infant and child mortality approximates more closely to that of Ife.

Oshogbo: Present water conditions.

The plans have been got out for waterworks on the Awshun river to cost £63,000 - which provide for a complete piped supply to all parts of the town.

Meanwhile water is drawn from a large number of small wells in the compounds some of which are good in that they have proper parapets and covers, some bad. Quite a number of them go down no further than the level of the subsoil water. Another source of water is the surface drainage of the town. As has been pointed out above the erosion of the surface has caused the formation of many shallow watercourses between the houses, all of which are dry except in the rains. A few of the larger ones appear to have a subsoil stream running below their courses as in many places, the people have sunk water holes in the dry beds varying from three to six foot deep and the water can be seen entering the holes, springlike from the upstream direction. These holes are used for drinking water supply, for household purposes, and when the ladies of the surrounding houses have completed their household duties they come and bathe in the all-providing water-hole.

And a hundred yards or less further down the bed, is another such hole receiving the water from the first, by filtration down through the intermediate sand; needless to say that all these waterholes contain highly polluted water.

Water is precious and is hoarded in the innumerable earthenware pitchers in the compounds to the great increase of the Aedes population of the town.

Oshogbo: Conservancy.

Section II. (Contd.)

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Oshogbo: Present water conditions.

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Oshogbo: Conservancy.

Section II. (Contd.)

Oshogbo: Conservancy.

It will have been gathered from this report so far that Oshogbo gives a somewhat bad sanitary impression. In consequence the pit latrine system stands out all the more because of its very real excellence. While it is impossible to say that every compound has its salga, when this is not the case there is invariably a near-by communal one shared by the neighbouring houses.

The latrines are prpperly built and are properly looked after. Most of them are kept covered and do not breed flies. There are of course a few exceptions but not many. Great credit is due to the efforts of the sanitary personnel which have brought the people up to this high pitch of cleanliness.

Wherever bush occurs in a town it offers temptation before which the cleanest-minded Yoruba seems to fall. Fortunately Oshogbo is a compact town and the only places where the bush encroaches on the town is along the stream along the southern area and along the river bank between the Awshun and the houses. In both these Localities the bush stinks.

The road junction in square M.7 is the starting place of the lorries and motor busses operating in and out of the town. Near it was constructed a properly designed bucket latrine in the immediate vicinity of two of the main incinerators of the town. One of the incinerator men is placed in charge of this latrine which he must look after at all hours of the day. In spite of his constant attention and the supervision of Mr. Cage who has considered this latrine as an experiment, the floors are for ever being soiled and the buckets left uncovered.

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This latrine was to have been replaced some time ago but at my request was left until I was able to see it. It is now about to be converted to Smoke Latrine. Four other eight hole latrines have been built in central parts of the town and are well kept, clean and sanitary. Mr.Cage reckons that one of these pits has a life of a year to eighteen months, but as the walls are mud, as are the floors, the change over costs little as the corrugated iron roof and its wooden supports can be used again. All that is lost is the shallow layer of concrete covering the mud floor.

In the older European Reservation near the station the sanitary Authority collects the night soil early every morning from the bungalows and it is dumped in a covered pit fitted with the Otway fly trap situated in the bush in square L:8. The small charge made for this service pays the wages of the two extra labourers employed.
A similar pit is about to be dug in square O:1 to serve the four houses of the New Reservation.

Oshogbo: Refuse Disposal.

Eight incinerators of various types have been built at various central points in the town together with their drying sheds. The price has varied from about £60 - for the elaborate one incorporating a hot plate at the hospital, to £7 - for the bush type. The latter appears to be somewhat overestimated but the comparative dearness is due to the corrugated iron roof with which it has to be fitted if it is to function during the rains.

All the later incinerators built are to a standard design. The dimensions are:

Height .... 6 feet
Length .... 6 feet 2 in
Breadth ... 4 feet(see Appendix 2)

The refuse is fed in through the fire door and is burnt as well as if it had had a separate feed. It is built of concrete, with iron fire bars and expanded metal fire floor.

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The

Section II. (Contd.)

The cost is £9 - and the blocks enable it to be easily pulled down and built up again elsewhere if required. I have suggested a movable corrugated apron between the combustion chamber and the chimney, to rest on the fire floor; this will cause a down draught and provide for better combustion.

Even with this fairly large provision of incinerators, the people are only just beginning to use them, It is still quite common for the housewife to throw her refuse out of the compound door rather than walk twenty yards and deposit it in the drying shed of the near-by incinerator.

All the dried up drains, the more secluded pieces of waste ground and the many irregular paths between the houses are all littered with this rubbish, At the end of the dry season the sun's heat keeps it fairly innocuous. In the rains it is far from being so.

Even so there are bright spots in the picture; though she may not consider it incumbent on herself to carry her refuse to the incinerator, many a housewife goes so far as to place it in a heap outside her private property, and then sets light to it. Apart from the untidiness of the process, it is a step in the right direction.

As I have pointed out, there are bush areas in the town which provide a splendid dumping ground in addition to their function as public latrines.

The innumerable goats and sheep which wander about the town seem to find a large amount of nourishment in this rubbish; it forms their chief means of life. I was struck by the very much larger amount of animal excrement which soils the ground every where one goes, as compared to the streets of Ife and Ilesha, which in themselves are far from clean.

The main roads of the town are exceptional in their cleanliness and this is only due to the sanitary gang whose daily duty it is to clean them up.

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Section II. (Contd.)

I attach drawings of the £9 - incinerator which I have recommended as standard throughout these reports on the towns under investigation. The final cost is £2 - more than that of the bush incinerator and is out of all comparison to it a more satisfactory job.

OSHOGBO : MARKETS.

As usual the King's Market in square N:19 is the focus of the food trade. The market is continued round the sides of the Afin. There are several rows of roofed mud stalls as well as private stalls of all sorts. The meat market is also situated here but I deal with it lower down separately. In the centre of the market is an incinerator and drying shed.

A Hausa market is under construction near the Hausa reservation in square D:14. The incinerator is already built and a public pit latrine is under construction. A drying shed is planned at this site.

As in other towns petty trading goes on wherever there is a shady tree at the conjunction of three or more paths.

OSHOGBO : Meat Markets and Slaughter slabs.

The meat market is in a portion of the King's market and consists of two long concrete floor slabs covered by corrugated iron roofs; the sides are open and there are no proper means of cleansing and draining the floor.

In addition a concrete slab has been laid down on which meat and joints may be cut up. Tables are also provided.

Unfortunately the meat market is surrounded on all sides by the vegetable sellers, the traders in haberdashery, jewelry, and other things.

No meat may be cut up or sold other than actually in the meat stalls or slab.

There are two slaughter slabs, one in square O:23 and the other in square B:13. The latter has just been built and is not yet in use. It is properly designed

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with

SECTION II. (CONTD.)

with large covered soak pits with screened entranced drains.

The older one is built on similar lines but the soak pits is now filled up and will have its top concreted over in the form of a basin from which the contents may be removed by bucket and buried. The butchers are responsible for it being kept spotlessly clean. They hire old women as cleaners but as they do not supervise the work themselves they are constantly falling foul of the sanitary inspector.

No slaughtering may occur except at the slabs. Animals are inspected before and after slaughter. As there is a tribute payable for every animal killed, some illicit slaughtering is carried on in remoter compounds. From the sanitary point of view this is deplorable not because the revenue is cheated but because uninspected meat is put on the market.

Oshogbo : School inspection.

There are mission schools in the town belonging to the C.M.S., the Roman Catholics, and the Wesleyans, the first two being large (up to two hundred pupils each). As representative of the school population I examined the smaller children in the C.M.S. Schools.

As the result of the Ilesha results and Dr. Hunter's information relative to all babies having enlarged spleens, I divided the children examined into two groups, the first of an average age of nine years, the second of about six.

In the older group there were 27 children of whom four had enlarged spleens or a percentage of 15; in the younger there were 73, of whom 23 had enlarged spleens or a percentage of 31.5. The total as a whole is a percentage of 27.

Although the samples are statistically small, Sir, Malcolm Watson has shown in his book "The Prevention of

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Malaria in the Federated Malay States" that even so, the spleen index is reliable. The difference of three years in the average age, i.e. six and nine, reduces the index by half.

Blood smears were taken from forty five of the above younger group, stained by Geimsa's thick film method and examined for the malarial parasite. Of these forty-five only one was negative.

Ten fresh foeces were examined with the following results:-

No.1. Ankylostomiasis, ascariasis,
2. Ankylostomiasis, ascariasis,
3. Ascariasis, taenia,
4. Ascariasis,
5. Ankylostomiasis,
6. Ascariasis, taenia,
7. Ankylostomiasis, ascariasis,
8. Ankylostomiasis,
9. Ascariasis,
10. Ankylostomiasis, ascariasis.

Although the same precautions were taken as in Ilesha to take the sample only from the surface of the stool to include any mucous there was present, no schistosome eggs were discovered. This may have been of course pure luck, as such a method is not the best for their detection in foeces, or it may have meant that this disease is not prevalent here, the fact remains that this method showed the presence of the infection in Ilesha. The findings fit in with Dr.Bell's experience that the diseases does not exist in Oshogbo to the best of his knowledge.

Oshogbo: Infectious and other Diseases.

All my information on these points is derived from Dr. Bell. Maternal mortality is considerable and in a large number of cases is due to retained placenta. This may be due to the administration to the mother by the native doctor of some drug such as pepper which produces spasm of the uterus and so hastens parturition but sets up contraction bands after the foetus has been expelled.

Still births are few but the infantile mortality is high; I was not able to obtain a closer estimate than this.

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The causes of death in the first year are undiagnosed convulsions, cerebral malaria, the diarrhoeas and the dysenteries, also to a certain extent pneumonia.

In childhood mumps occurs but not measles or whooping cough; helminthiasis of some sort is universal but as noted above not schistosomiasis. There are also cases of infantile paralysis and cerebro spinal meningitis, which although not epidemic, does occur.

The diseases of adult life are frambosia, amoebic dysentry, gonorrhoea, pneumonia, chronic pulmonary tuberculosis, and of course small pox (especially in the dry season.)

Syphilis is not a negligible quantity as it is in Ilesha and Dr.Bell has had cases of Syphilitic Iritis. Dracunculus is not uncommon.

Oshogbo: Small pox.

Small pox is endemic in Oshogbo and is particularly prevalent during the dry season. It attacks all ages. There are three public vaccinators who are Government trained. Their duties are constantly to go round the town on the look out for small pox, to report any such, and to vaccinate.

There is an isolation camp in square K:10 in open bush. It consists of several small open thatched huts to which the patients and the contacts are removed. There is being built a series of concrete floors further away from the hospital. On these will be erected temporary wood and thatch superstructures. After occupation these will be burnt down and the floor scrubbed down with disinfectant.

Disinfection of all premises in which small pox has occurred is carried out by the vaccinators with cyllin from a Four Oaks Spray.

Oshogbo: Mosquito etc.

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Oshogbo: Mosquito etc.

Section II. (Contd.)

Oshogbo: Mosquito Survey.

In my general inspection of the town compounds I noted that Aedes were breeding freely in the many pots and pitchers which litter the yards. I noted one important fact which hitherto had escaped my notice in connection with the indigo industry. Larvae breed only in one of the brews concerned during the process; if the pot contains a blue or a greenish brown infusion, or if it smells strongly of decomposing organic matter, no larvae are found. There is one water which is comparatively clear but sufficiently impure to put one on one 's guard, and in this the larvae are found.

I did not feel justified in asking Dr.Bell's permission to take the Government microscope out on the comparatively rough field work of a larval survey. This was carried out with a pocket lens of a ten magnification. The anopheles found are therefore not differentiated into species as in Iesha or Ife.

As has been already noted none of the streams were more than small waterholes of stagnant water. Those in which Anopheles were found were also dirty, were slightly shaded but the sun played on them to a certain extent and were sufficiently remote from human habitation to be undisturbed, or contaminated with excrement, soap suds and such like.

I append a list of places where larvae were found:-

Square	M:6	Stagnant pool	Culex,
	N:6	do	Culex,
	P:7	do	Culex,
	A:13	do	Anopheles
	B:15	do	Culex,
	G:16	do	Culex,
	G:18	do	Culex,
	J:21	do	Culex,
	K:23	do	Anopheles,
	L:24	do	Culex.

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K:25	do	Anopheles,
L:24	do	Culex.

Besides

Section II. (Contd.)

Besides negative dippings in some of these pools others gave like results in squares L;6, A:12, A:14, C:15, G:17, J:22, and K:24.

Thanks to the kindness of Dr.A.M.Walcott of the Rockefeller Foundation, I was lent a trained mosquito catcher. He made catches in the houses in the parts of the town I detailed to him each day. When he brought in his "bag" in the evening I examined and classified the mosquitoes. The results were :-

New European Reservation, X	Ae. Aegypti, 5;
Native huts square P:6, XX	Ae. Aegypti, 15;
Jamegbo quarter (round O:20),	Ae. aegypti, 21, C. Nebulosus, 1;
Balogun quarter (round K:14),	Ae. aegypti, 6, C. nebulosus 5, C. decens, 2;
Isale Kegbe quarter (K;20),	Ae. aegypti, 2, C. nebulosus, 5, C. decens, 5;
Hausa reserve (C:13),	A. gambiae, 2, C. nebulosus, 1.

Each of these represents one day's work with the exception of XX which was only half a day (Saturday morning) and X which were caught by myself in my own quarters one evening; it is not surprising that the Anopheles total is so small when it is remembered that they only invade the houses at night to feed.

Oshogbo: Sanitary Personnel and their duties.

This consists of:-

1 2nd class Sanitary Govt: Inspector		£7-14-2 each
1 Subinspector, Govt.		6-0-0
3 Vaccinators, Govt:		5-10-0
4 Subinspectors, N.A.		1-10-0
1 Headman, Govt:		2-4-0
50 Labourers	8d to	0-0-10 a day

The duties of the vaccinators are detailed under the heading of "Smallpox". Those of the inspectors are weekly inspection of all compounds in their areas, reporting of nuisances, and supervising cleanliness. Nuisances include mosquito breeding, improper salgas, and the construction of borrow pits. The last is illegal unless with permission previously

Section II. (Contd.)

Besides negative dippings in some of these pools others gave like results in squares L:6, A:12, A:14, C:15, G:17, J:22, and K:24.

Thanks to the kindness of Dr.A.M.Walcott of the Rockefeller Foundation, I was lent a trained mosquito catcher. He made catches in the houses in the parts of the town I detailed to him each day. When he brought in his "bag" in the evening I examined and classified the mosquitoes. The results were :-

New European Reservation, X — Ae. Aegypti, 5;

Native huts square F:6, XX — Ae. Aegypti, 15;

Jamegbo quarter (round O:20), — Ae. aegypti, 21, C. Nebulosus, 1;

Balogun quarter (round K:14), — Ae. aegypti, 6, C. nebulosus 5, C. decens, 2;

Isale Kegbe quarter (K:20), — Ae. aegypti, 2, C. nebulosus, 2, C. decens, 3;

Hausa reserve (C:15), — A. gambiae, 2, C. nebulosus, 1.

Each of these represents one day's work with the exception of XX which was only half a day (Saturday morning) and X which were caught by myself in my own quarters one evening; it is not surprising that the Anopheles total is so small when it is remembered that they only invade the houses at night to feed.

Osogbo: Sanitary Personnel and their duties.

This consists of:-

1 2nd class Sanitary Govt:	Inspector	£7-14-4 each
1 Subinspector, Govt.		6-0-0
3 Vaccinators, Govt:		5-10-0
4 Subinspectors, N.A.		1-10-0
1 Headman, Govt:		2-4-0
50 Labourers	8d to	0-0-10 a day

The duties of the vaccinators are detailed under the heading of "Smallpox". Those of the inspectors are weekly inspection of all compounds in their areas, reporting of nuisances, and supervising cleanliness. Nuisances include mosquito breeding, improper sulgas, and the construction of borrow pits. The last is illegal unless with permission previously

Section II. (Contd.)

previously obtained.

The town is divided into five sanitary areas, 1. the European reservations; 2. the area to the west of the Ilesha - station main road; 3. the area north of the Palace - Ikirun road, east of the Ilesha - station road and west of Owe-Ope valley; 4. the Area to the east of 3; and 5, the area to the east of the Ilesha - station road and south of the Palace-Ikirun road. There are 1124 compounds in the town.

Each area is in charge of an N.A.subinspector and these are supervised by the Govt.inspector and sub-inspector.

The Sanitary Authority is the Medical Officer who works through the European Sanitary Inspector.

A sanitary gang is detailed each morning to clean up the roads of the town.

Bakehouses are supervised. This trade may not be carried on without licence which can be obtained only after compliance with the requirements as to cleanliness, flyproofing etc., of the Sanitary Authority.

Mr.Cage runs a small school for aspirants to the post of Sanitary Inspector. He gives lectures and the pupils accompany the area inspectors on tours round the areas so that they obtain a proper insight into their future duties.

In the past there has been a certain amount of difficulty in the outlying towns such as Ilesha, as the local magnate, such as the Owa appoints to a vacancy, any particular person whom he may think fit. As literacy or knowledge of elementary sanitation are not taken into consideration by him, the appointments in many cases have been far from satisfactory.

On the other hand he generally refuses to have a man who has been trained in Oshogbo, but whom he does not know.

Arrangements

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Arrangements

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Arrangements are at present being made for these local chiefs to send one or two men whom they may consider suitable, to the sanitary school at Oshogbo, so that as the vacancies occur, they may be filled by local men who have received the required training.

Oshogbo: The African Hospital.

This was opened last year by the Medical Officer, Dr.C.D.Bell. It is situated well back from the road in square D:9 on the top of a small hill. Behind it there is nothing but open ground covered with sparse bushes and palm trees, among which is the present small pox isolation camp.

This as noted elsewhere is to be moved shortly.

Maternity work is being developed in connection with the out-patient clinics.

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Section II. (Contd.)

Ede: History.

Ede was originally founded during the time of Koti of Ibadan. The Ijesha tribe was in the habit of molesting and raiding the caravans to and from Apoma which was then an important market centre. To put an end to this, Koti sent a distinguished archer, Timi by name to build an outpost at Ede for the protection of the traders.

Since the country has forsaken its warlike method of living its history has been that of the slow growth of a native village which found itself on the railway when it was constructed early this century. Added impetus to its increase in importance was the completion of the Ede-Ife road after the War whereby it became the railhead for the important cocoa and palm oil industries carried on in that town.

In 1928 and 1929 it was included in the towns suspected by the Rockefeller Foundation of being an endemic centre for yellow fever.

It has recently had occasional visits from the European Sanitary Inspector at Oshogbo but only at the beginning of May of this year was money found to provide the nucleus of a Sanitary Staff for the town.

Ede: General Description.

With an estimated population of 35 thousand, the town is ruled by a Timi who is a very minor chief under the Bale of Ibadan and the Alafin of Oyo. It is situated on the railway 173 miles from Iddo, in the deciduous forest zone. Although as a very broad classification, the Nigeria Handbook's is useful, the country is more accurately one of rolling moors similar to those of Yorkshire, except that it is covered with low scrub and long~~ish~~ grass with a scattering of palm trees.

Direct

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Direct

Section II. (Contd.)

Direct roads join the town to Ife, Oshogbo, and Ejigbo. It has a similar climate to Oshogbo although it lies somewhat lower in altitude (about nine hundred feet.)

Apart from these roads there are none other in the town. There are a few fairly well defined broad footpaths indicated on the plan by broken lines, which follow water erosion channels. But as with Oshogbo, even if at one time in the dim past there was some system of portioning out the ground, which I doubt, all trace of it has been lost and the houses and ruins appear to be dumped down anyhow. The paths wander about in all directions between them, sometimes being wide thoroughfares, at others narrow rain gutters between the houses.

Ede: Geography.

The town stretches for a mile along a comparatively high ridge slightly over a mile south of the Awshun River which here flows westwards. Short spurs project northwards into the river valley and along one of these the town has extended down to the river bank.

At this point the water is spanned by the Ife road connecting the native town with the railway station, the Rest House and the projected European Reservation on the north side. The Ejigbo road runs northwest from the station and the Oshogbo road north east from the bridge.

On either side of the main spur are short valleys containing watercourses which are dry in the dry season, but during the rains have fairly extensive areas of swamp. The highest point of the town is immediately to the south of this western depression.

Beyond the crest to the south the ground slopes gently down to a small stream about a mile and a half away and parallel to it. The town does not extend far on to this slope.

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Section II. (Contd.)

The projected European Reservation is to be to the north of the railway line on the west side of the station; at the moment there is no white population in Ede.

Ede: The People.

As the town is not only a rail head but also a centre for palm kernels and cotton in a small way, nobody goes hungry. Because of the surrounding farms, owned and worked by the town people, Ede is self supporting as far as food is concerned and the cost of living is considerably below that of Ife. The male tax last year was six shillings.

As is the general rule in this part of Nigeria, a man averages four wives. As the Timi and his court seemed to look upon my enquiry into the subject as rather a joke, it was difficult to get an idea of the usual size of the family; it seems that a woman has eight to ten children of whom four to six survive.

The Timi is getting on in years but for all that does try to comply with orders and get things done. He has taken up the idea of sanitating the town and as is reported further on, the work is progressing fast. Already Ede has lost its former reputation for filth. The Timi is the head of the native administration and rules the town through Heads of several quarters into which the place is divided up; the quarter heads in turn delegate their authority to compound heads.

As I was unable to get even a vague description of the lie of these quarters, I have not attempted to give them here. As the town is now one single sanitary area this is not of great importance.

There are two fair sized missionary schools, under the C.M.S. and the Baptists. There are also a surprising number of Mohammedans; but the majority of the people are pagans. This accounts for the numberless ruins in the town as under them are buried the ancestors of the

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present owners who either keep the buildings as ruins, or build fresh houses on the old sites.

Indigo dying is carried on, on an extensive scale. Palm kernels are also crushed which process adds yet another complication to the anti-malarial work.

Ede: Present Water Conditions.

Ede has been a bye-word in the past because of its filth; now that this is slowly being cleaned up, another condition is becoming more and more noticeable the high degree of water-untidiness. Everywhere one goes, one is met with borrow-pits containing water, bottle-necked erosions in the rock also containing water, stagnant ponds, and small springs.

The formation of the ground is similar to that of Oshogbo, and consequently as in that town, there is a high degree of soil erosion on the gentle slopes between the houses. Water drains away rapidly and so scours the ground.

The natural drainage of the town is down two watercourses, one on either side of the main spur carrying the Ife road, into the Awshun River. In their lower reaches where the valley bottoms are filled up by their scourings, there are broad flats which during the rains become swamps.

The water table throughout the town is not far below the surface but never seems to rise because of the comparatively steep slopes to these valleys. It serves however to keep filled with water all the many erosions and caverns in the rock.

When I surveyed the town (the latter half of May), the rains were unusually late in beginning and the watercourses were bone dry. There were no breeding places for the malarial vector that I could discover. Doubtless they only await the rains to spring into existence down both of the valleys.

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The

Section II. (Contd.)

The water supply is from shallow wells in the compounds and from the caverns and erosions in the rock. No well is properly constructed as yet.

Ede: Conservancy.

Before the first of May this was of the sketchiest. Since then heads of compounds have taken up the building of salgas with great enthusiasm. Not only are they being properly constructed but they are being used. True only a beginning has been made, but that beginning is very creditable. The habits of years are not corrected in a day and the bush or any small collection of bushes is used as a latrine; and not only these but also the dry water courses, the less frequented public paths and of course borrowpits.

Refuse Disposal.

This does not exist. Every house dumps it in the nearest least inconvenient spot whether it is waste land, a borrow pit, a public path or a watercourse. There it remains to breed its fore-ordained number of flies before it is eaten up by the goat or sheep population, dessicated by the sun, washed away by the rain, or just decomposes.

Ede: Sanitary Personnel and Duties.

This consists of a staff of

1 Trained headman £1-10-0 a month

9 Labourers at 9d. a day each

This staff has only been available since the first of May. It is planned to give the present head man further training at Oshogbo and make him into an inspector, and to have his place taken by another head man who is being trained at present.

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Section II. (Contd.)

The town has not been split up into sanitary areas. The duties of the head man are those undertaken elsewhere by the sanitary inspectors, supervision of conservancy and refuse disposal, enforcement of water tidiness, and checking of nuisances; the filling in of burrow pits and the prevention of the digging of fresh ones.

With this staff and the size of the town taken into consideration, the work seems out of all possibility. But as pointed out elsewhere in this report, very good progress has been made already in the building of salgas. During my visit, I also found that the people were waking up to the inadvisability of tipping all their refuse just outside their backdoors. Considerable support is being obtained by the headman in his efforts, from the Timi and his Quarter-chiefs.

There is no system of vaccination, or effort to cope with small pox.

Ede: Infectious and Other Diseases.

Although nominally in the district of the Medical Officer of Oshogbo, as there are no Europeans resident there, not much is known about the disease picture of the place.

The Timi and his court were somewhat vague in their information.

According to them infant mortality is high after the first two months of life but a high death rate continues until puberty. Convulsions, high fever, (by which I suspect them to mean pneumonia), diarrhoeas, and the dysenteries appear to be the main causes. Smallpox also takes a considerable toll in the dry season.

Helminthiasis and chronic malaria are universal as will be seen under "School Inspection".

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Section II. (Contd.)

In Ife, Ilesha, and Oshogbo, the chiefs were emphatic about old people living a long time. Here however it was definitely stated that once a man or a woman grew old, they did not live anything out of the ordinary.

There is of course entire absence of maternity child welfare, or school medical work.

Ede: School Inspection.

There are two mission schools, one the C.M.S., the other the Baptists. I conducted a spleen survey throughout both, and a parasite index survey of the former. Owing to a misunderstanding of my instructions at the last minute the samples of foeces were not produced for me so that no examination was possible.

Of the 45 thick blood films taken, forty-one showed the malarial parasite; no other parasites were found. This gives a malarial parasite index of 91%, which agrees with those of Ife, Ilesha and Oshogbo.

Owing to my provisional conclusions arrived at Oshogbo on the behaviour of malarial spleens in this part of the globe, in examining this organ in these two schools, I lined up all the children according to their heights, beginning with the "tiny tots" and ending with children of about thirteen years old. By an arbitrary division about half way down the line I obtained two groups, those averaging about seven, and those about ten.

I give the results in full. - denotes spleen not felt, s denotes spleen palpable.

C.M.S.; Group 1; -s-sss-sss-ss-ss-s-s----ss----s
------ss. Total 41; S.I. 49%.

Group 2; -s--s---s--. Total 11; S.I. 27%

Baptist; Group 1; sss-sssss-sss-sss----------s-ss
--s------s----

Total 47; S.I. 40%.

Group 2; 34 all negative. S.I. 0%.

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The C.M.S. group 2 is unduly high judged by past results, and the corresponding group of the Baptists is unduly low. If they are both added together we get Group 1; 42% and Group 2; 6.6%

Two significant points emerge, the numbers of S at the younger end of the line, and secondly the higher sleen index in the younger group. A point of interest, though I do not wish to emphasize it, is that among the C.M.S elder children there are several boarders taken from fairly far a field. In the Baptist all the children were local.

EDE : MARKETS.

The main market is situated in square I:9 on either side of the road. There are a few ramshackle thatched roofs supported on wooden uprights which protect the vendors from the sun; there is no attempt at flooring or of keeping the place clean.

The meat sellers form a little group of rather better stalls which contain wooden tables on which the meat is placed so that it can be handled by everyone who may wish to do so, and crawled over by the innumerable flies.

As elsewhere petty trading takes place in all the larger open spaces where a tree of any size may offer shade from the sun.

Ede: Slaughter Slab.

This is built in square I:8 beside the main road separated from it merely by the street drain. The slab drains directly into this, there being no soakpit or basin of any description to receive the fluids from the carcase.

Ibadan: History.

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Ibadan: History.

Section II. (Contd.)

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About 1830 the old established kingdom of Ọyọ then situated to the north of its present site was broken up by the Fulani armies from the north. The refugees fled southward and in the Egba village of Ibadan found the remains of the armies of the allied Ifes and Jebus, routed as far as this point by the victorious Owus. These various remnants formed a confederation which finally took the town of Owu by treachery and destroyed it.

The Ọyọ element in Ibadan gradually preponderated over that of Ife, and settled the matter by arms. It extended its territory all round by agression until in 1870 it found itself attacked on all sides.

In 1886 the British interfered and the dispersal of the forces on both sides was arranged. It was not till 1892 with the British capture of Ijebu Ode, and the subdueing of the Ilorins by the troops of the Royal Niger Company just before the close of the century that peace came to Ibadan.

At that time the railway was built up to it and then extended beyond. It has retained its importance as the Yoruba administrative centre and comes directly under the Alafin of Ọyọ.

Ibadan: General Description.

Ibadan is the second largest native town in Africa with a population of more than 150 thousand. It is situated north east of Lagos and south west of Ilorin, 111 miles by road, and 120 miles by Railway from the former. Roads run to Ife and Benin, Ijebu Ode, and Ọyọ, east south and north respectively.

The country is classified by the Nigerian Handbook as savannah forest, at a height of 660 feet. above sea level.

The

Section II. (Contd.)

Ibadan: History.

About 1830 the old established kingdom of Oyo, then situated to the north of its present site was broken up by the Fulani armies from the north. The refugees fled southward and in the Egba village of Ibadan found the remains of the armies of the allied Ifes and Jebus, routed as far as this point by the victorious Owus. These various remnants formed a confederation which finally took the town of Owu by treachery and destroyed it.

The Oyo element in Ibadan gradually preponderated over that of Ife, and settled the matter by arms. It extended its territory all round by aggression until in 1870 it found itself attacked on all sides.

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Section II. (Contd.)

The following were the meteorological statistics for 1926 :-

Minimum absolute temperature	...	62° F
Maximum absolute temperature	...	106° F
Mean temperature	...	81.3° F

Average of the past twenty years' rainfall

January	... ...	.27 ins
February	... ...	.95 "
March	... ...	3.85 "
April	... ...	5.43 "
May	... ...	10.73 "
June	... ...	19.10 "
July	... ...	11.29 "
August	... ...	2.99 "
September	... ...	5.34 "
October	... ...	7.39 "
November	... ...	2.52 "
December	... ...	.79 "

Average annual .. 49.00 ins.

The area in the vicinity of the railway station has been declared a second class township whereas the town proper has its own native administration.

Ibadan: Geography.

The backbone of the town is a high ridge running north and south from square L:1 to square Q:21. The ground slopes away east and west to two broad valleys which unite to the south about square P.25. On the extreme east and west of the town are two further ridges though not as high as the principle one from square W:1 southward and from D:1 to L:22 respectively though the latter is broken towards its southern extremity by a stream running west at square K:19.

To the north of the town there is high ground so that the two main valleys are broken up into several smaller ones at their upper ends.

Ibadan does not encroach on this northern high ground except on Government hill about Square C:2. It crosses the main valleys and extends on to the two subsidiary ridges on each side of the main one. The western edge has been declared a second class township and contains the European trading section, Government Offices and the railway station.

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The

Section II. (Contd.)

The rest of the town is under the Ibadan Native Administration the chief offices of which are on Government Hill (C:6). The large-size Council Hall, reminiscent of Greek architecture, crowns the highest point of the main ridge and is virtually the centre of the town (N.14).

Ibadan: The People.

As reported under "The History" the people are descended from a mixture of the various sections of the Yoruba nation. They are fairly intelligent but are reported as being of a rather lazy nature. Probably because of their town life they have lost somewhat the strict sense of ownership of property that prevails so markedly in the country section of Yorubaland, and are not above petty pilfering.

I was told that they were fairly clean, but in a thorough survey of the compounds, markets, and other places where their intimate life is visible, I failed to see any reason for this reputation, when compared with the people of the four towns already reported on.

The town is essentially a commercial centre for a very large sorrounding area, and large amounts of produce, etc., are bought and sold. Many of the people have farms in the immediate vicinity so that the town is more or less self-supporting for food. They are a prosperous folk as is shown by the numerous corrugated iron roofs to their houses, their enormous council hall, and the extent to which the man in the street clothes himself. Taxation in 1929 was 7/- a head for males.

The Bale rules the town through a council of three senior chiefs. There are two native courts, at the head of one of which he sits, the other being in charge of the Balogun. There is an inner circle of twelve chiefs who function through the numerous ward-heads.

The many wards are divided up into eleven sanitary

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The many wards are divided up into eleven sanitary areas

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The policy at present and for some time past, is for the people to shape their own destinies to an even greater extent than usually met with. No amenity of civilisation is pressed on them until they recognise its advantage and ask for it. At this stage they are instructed in its advantage and the best way of getting it.

As will be seen from this report, they have not awaken to benefits of cleanliness, the bush towns are clean by comparison.

Education is in high demand. There are fifteen assisted schools with more than two thousand pupils, besides ten non-assisted schools.

As elsewhere, the indigo dye trade flourishes to the great advantage of the Aedes population.

Ibadan - Present Water Conditions.

Under the heading of "Geography" the form of the land has been described. It is composed of laterite with the hard rock coming to the surface almost everywhere. Water erosion is therefore very intense in the inhabited area where the vegetation has no chance to hold the soil together.

Except at a very few unimportant points all the valley bottoms are swamps varying from fifty yards to more than a quarter of a mile in width. Fortunately they are mostly wet-season and only in three places in the town are they permanent in Squares T:8, T:10, U:12, U:13 and J:11. I say fortunately, as the mosquito figures and the malarial analysis given later show the town to be very unhealthy even in its present condition.

These belts of swamps are sometimes covered with long grass, sometimes with dense tropical undergrowth. In places advantage has been taken of the water-logged

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Section II. (Contd.)

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SECTION II. (CONTD)

condition to plant small gardens where maize, sugar, and okro are grown.

As will be seen from the plan, houses come down to edge of the swamp area except in the outlying districts. All along the swamp fringes are water holes, natural and artificial, all of a very muddy consistency and generally overgrown with water vegetation or a green scum. Pollution is intense as pit latrines in these areas are all filled with water up to the water table level.

Where it would be too much trouble to walk into the swamp, shallow wells have been sunk often in the closest vicinity of the compound salga. In two or three cases the one digging seemed to serve both purposes.

On the higher ground the wells go into the laterite rock but again unfortunately are often too closely placed to a pit latrine.

The well tops vary in their quality. Some are fitted with proper parapets, covers and pumps. The last item is noteworthy as nowhere else (except in a hospital) have I found them in this investigation. Unfortunately they are few and far between and are out of order. Other wells have cemented parapets and wooden covers. Water is drawn by bucket and rope and the trap door is invariably left open. Many wells have no pretentions at all to modern sanitation and end in a mud wall "tout simple". There is no cover to bother the drawer of water but to offset this advantage (to her) she must provide her own receptacle. Needless to say this is often any old petrol tin which for the rest of the time lies out in the open subject to the attentions of goats, mosquitoes and playing children.

The streams themselves are admirable latrines as they provide privacy because of their vegetation. They are also places where refuse is tipped. /Fig: 17.
A little lower down the housewife draws her water and the younger generation bathe.

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A little lower down the housewife draws her water and the younger generation bathe.

Ibadan

SECTION II (CONTD)

Ibadan is the proud possessor of two piped water supplies. (I deal here only with Ibadan town; the second class township area I shall report on separately at the end of this).

The Government Hill supply is drawn from the high ground to the north and supplies that hill only. 3000 gals. are pumped up per hour for 1¾ hours daily.

The other supply ~~if~~ is from a spring in square M:8. During eight hours daily 20 thousand gals. are pumped into the main which supplies the Native Hospital in square K:8, the King's Market, and three points on Council Hall Hill. The water in both these systems is delivered raw.

The Native Administration have set aside a sum of £800 - for the canalisation of the Agompa swamp in the vicinity of square T.8. (see Fig.II.)

Ibadan - Conservancy.

There are four public Latrines, two of them pail and two of them pit. The former are at the bus terminal in square T.10 and on Government Hill; and the pit latrines, near the Council Hall, and at the Government school in Square M.14.

Every house in the town is supposed to have a properly constructed salga. There is a regulation by which a householder can be compelled to build one. Many houses have them but a considerable number of these are in bad repair or are of bad construction originally. In the areas bordering the swamps they go below water level. But very many houses have no latrine provision at all and in this statement I am including compounds, as the excuse may be raised that several houses have a communal pit. Even so there are many such groups without latrines.

One's nose announces that every patch of vegetation serves in lieu. ~~Fæces~~ lie on the pathways provided the

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One's nose announces that every patch of vegetation serves in lieu. Refuse lie on the pathways provided the ground

Section II. (Contd.)

ground vegetation is a few inches high, enough to mask it. I walked up the stream in R.10 for a hundred yards and had to pick my way to avoid soiling my boots with fresh human excrement (Fig:I). A curious thing is that a patch of bush close to a good salga is as thickly strewn as if there was no latrine in its immediate proximity.

Ibadan: Refuse Disposal.

The European associates the idea of refuse disposal with that of taking it away and destroying it. Not so the African of Ibadan. He prefers the less new-fangled method of letting it lie where it falls and allowing nature to carry out its processes of disintegration. (Fig: III) This continues in spite of the many prosecutions, convictions and fines. The state of affairs is not found solely in the more remote compounds but throughout the town (Fig.IV).

There are six incinerators, three of which are in the small Hausa quarter of Sabongeri (square S:1). Of these three, one was at work, the others showed signs of having done so recently but were choked with refuse, gravel, and half burnt material. The trouble lies in the fact that there are no drying sheds and also that the type of incinerator used is "bush". A housewife can put an incinerator out of action by throwing her rubbish and sqeepings "en masse" onto the grate. This is what had occurred on these two dead incinerators.

Another bush incinerators is at Kudeti (square N.22), it is also of the built-up brick bush type covered by a corrugated iron roof. Except that there was no drying shed it was in perfect condition but showd no evidence of recent use.

There is a similar incinerator on the opposite side of the stream to the slaughter slab in square Q.13. This slab is the principle one in the town. There is no drying shed. Neither does this incinerator appear to have been

Section II. (Contd.)

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Section II. (Contd.)

been recently used. The slaughter slab refuse is burnt on the ground in its immediate vicinity and the dried bones remain to form a considerable pile (see Fig.V).

The last incinerator is on Government Hill in square B.2 and is really a good piece of work; it is of the hot plate enclosed type and cost about £60. It was completed three weeks ago but is not yet in use. It has been placed within fifty yards of two European bungalows both of which are continuously inhabited. Temporary drying sheds are under consideration.

Ibadan: Markets.

These are situated in the following places:-

Ayeye	...	P.11
Agbeni	...	Q.13 and R.12
Awba	...	O.15 and P.15 (King's Market)
Oje	...	I.8
Buko	...	Q.22
Olugbodi	...	L.13
Agodi	...	E.5
Inalende	...	Q.5
Sabongari	...	T.1

These markets are all of the most primitive description; trading is carried out in the open by women squatting on the ground over their wares. There are often thatched stalls or mud stalls and very occassionally a cement floor. (Fig:VI).

Meat is sold in amongst the goods offered in the markets. With the exception of Bukaw and Sabongeri, which are compact, these markets are long and straggle along both sides of a main road for some considerable distance.

In Bukaw market there is a drain three foot deep running diagonally across between the stalls. It contains refuse and pools of filthy water. On one side of this market is the close undergrowth of the fringe of the swamp; it is in daily use as a latrine.

Ibadan: Slaughter Slabs.

There are five slabs in the town in all. The main one is in the heart of the town on the banks of the Gege stream

Section II. (Contd.)

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In Bukew market there is a drain three foot deep running diagonally across between the stalls. It contains refuse and pools of filthy water. On one side of this market is the close undergrowth of the fringe of the swamp; it is in daily use as a latrine.

Ibadan: Slaughter Slabs.

There are five slabs in the town in all. The main one is in the heart of the town on the banks of the Gege stream

Section II. (Contd.)

stream in close proximity to the Agbeni market. The slab itself is properly kept by the butchers. The central gutters drain into pails so that there is no nuisance. After the killing the carcase is cut up on a large concrete floor sloping to a proper concrete gutter. This floor is covered with a corrugated iron roof and is kept properly clean.

Unfortunately this gutter runs some fifty feet parallel with the stream and then suddenly ends. The washings carried away by it simply drain into the sand of what is virtually part of the broad stream bed. The bones etc., are burned on the opposite bank, whereas the offal is buried at little lower down with a very shallow covering of sand in the drier part of the stream bed. It only needs a small storm to flood the stream sufficiently to uncover it all and carry it down to the various deeper pools below where water is drawn for household purposes and where the picanins splash about in the heat of the day.

Another slaughter slab is in square E.5; this is no longer used.

The slab beside the roadside in square L.15 is properly constructed and kept up, drains into a pail and the waste is properly buried in some waste ground close by and the rest is burnt on the ground. The same is the case with the slab in the Awba market (Square N.15).

Another slab is in the Hausa reserve in Square T.I. It is in good condition in every respect except that the gutter drains into a soakpit now completely choked up and covered with a pool of decomposing organic fluids which overflow on to the slope beyond to be lost in the weeds which clothe it. The bones etc., were in a semi-burnt condition and the surroundings of the slab had enough remnants of gut-contents on the ground to be providing a happy hunting ground for a swarm of flies.

As the new slab is now ready, the above is closed, and the soakpit is about to be washed out and filled in.

Section II. (Contd.)

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Section II. (Contd.)

Ibadan - Sanitary Personnel and their duties.

This consists of the following personnel under the Medical Officer of Health:-

1 Grade 2 European Sanitary Inspector, shared with the township.

1 African Sanitary Inspector in charge,

11 Area Sanitary Inspectors.

1 Meat Sanitary Inspector.

4 Labourers. (20 are provided for in the new estimates).

6 Vaccinators.

The duties of the Area Sanitary Inspectors are the usual ones of checking nuisances, litter, water untidiness the supervision and proper care of salgas, etc.

The meat inspector is solely concerned with inspection of meat. A Sanitary Inspector is in charge of the slab at Sabongeri.

The vaccinators working in rotation at special posts are there to seize hold of all and sundry as they pass by and vaccinate them if they can show no pock or vaccination marks.

Ibadan: Infectious and other Diseases.

Diseases of infancy and childhood have already been dealt with under that heading. Those of adult life are tropical ulcer, guinea worm, pneumonia, subtertian malaria, amoebic dysentery, gonorrhoea, and schistosomiasis.

Occasionally one comes across leprosy and yaws from time to time. Relapsing fever is rare but does exist. Helminthiasis is almost universal, but tape worm, although found in Hausas, never attacks the Yorubas, probably because of the almost purely vegetable diet of the latter, and its thorough cooking.

There is not much syphilis though as already reported a good deal is suspected. There is no sleeping sickness or loa-loa infection. During the past harmattan season influenza was very prevalent.

The

Section II. (Contd.)

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Occasionally one comes across leprosy and yaws from time to time. Relapsing fever is rare but does exist.

Helminthiasis is almost universal, but tape worm, although found in Hausas, never attacks the Yorubas, probably because of the almost purely vegetable diet of the latter, and its thorough cooking.

There is not much syphilis though as already reported a good deal is suspected. There is no sleeping sickness or loa-loa infection. During the past harmattan season influenza was very prevalent.

The

Section II. (Contd.)

The principal skin diseases are scabies and ringworm. Smallpox is common during the dry season at all ages. By the kindness of Dr.W.E.Glover, S.M.O. in charge of the African Hospital, I have had access to the files of that hospital for the period 1925 to 1929 inclusive; according to these the principle diseases are :-

Malaria
Amoebic Dysentery
Varicella
Small Pox
Yaws
Syphilis
Gonorrhoea and Gonorrhoeal Ophthalmia
Chronic Rheumatism
Unspecified Conjunctivitis
Mastoid and other ear affections
Non-Specific Bubo
Acute Bronchitis
Diarrhoea and Colitis
Helminthiasis (Taenia, Ascaris, Dracunculus),
Arthritis
Tonsilitis
Boils, Abscesses and Ulcers.

The work of the Rockefeller Commission in the past two or three years goes to show by means of the serum-protection test that more than thirty per cent of the inhabitants of Ibadan have had yellow fever. It must be noted that no case of the disease from the town has been diagnosed as such which indicates that the African of these parts gets the disease so mildly as generally to by unaware of it as such.

When it is remembered that the travel habit is being rapidly developed amongst them by the railway the position becomes serious. Even for this reason alone it would seem that leaving them to their own filth is no longer a matter affecting nobody but themselves. From the potential harm which they are liable to cause elsewhere, there is every reason to clean them up whether they are sufficiently awake to the desirability of the process or not.

Ibadan - Hospitals.

In Ibadan Town (as distinct from the township) there is a modern hospital built in 1928. It contains two large wards and small wards for special cases, 40 beds in all.

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Section II. (Contd.)

There is a well designed theatre with subsidiary rooms and the usual pharmacy, out-patients' room, stores, and offices. The equipment is good.

Building is at present in progress to provide more beds and housing for an X-ray plant which is on order. The hospital is about to have its own petrol-electric supply.

Dr.W.C.Dale is in charge and is assisted by Dr.F.C. Cassidy.

Infectious Disease Hospital.

This caters for the whole of Ibadan and comes directly under the Medical Officer of Health. It is situated behind the African Hospital to the west of the railway station. It consists of a few temporary shacks.

In the estimates of 1930/31, £500 has been provided to build a new I.D.Hospital on the Hammock Road to the north of the town; it will be of the semi-permanent country type and will be built of local material. The permanent staff will consist of one caretaker and temporary staff will be engaged during time of epidemic as required.

Ibadan: Dispensary.

There is one dispensary on Agodi Hill (D.5) for the use of officials. It is run in connection with the hospital. A similar one is about to be opened in Olugbodi (L.14)

Ibadan: Maternity and Child Welfare.

According to information from Dr.Dale the Medical Officer in charge of the N.A.Hospital, maternal mortality is fairly high due to malpresentation and unskilled interference by native medicine men.

Infantile mortality is very high. On an average a woman says that she has living only two or three out of her family of eight or nine. The infants die of marasmus, the dysenteries and diarrhoeas, and pneumonia. Dr.Dale suspects congenital syphilis as being an important cause of death.

95%

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95% of the children have ascariasis, and 50% ankylostomiasis. 65% of the school children suffer from urinary schistosomiasis. Thrush occurs in babies but only rarely does it go as far as noma. Dr.Dale has seen no cerebro-spinal meningitis or measles though whooping cough does occur. He has seen late results of infantile paralysis, also chicken pox, and in the dry season a good deal of small pox.

Children do not suffer from tuberculosis and though all of them have malaria at one time or another it does not kill.

Ibadan: School Inspection.

In 1929 under Dr.R.C.Jones who was then Medical Officer of Health a considerable amount of School work was carried out. Proper cards were obtained from Lagos modelled on those used in the Gold Coast and since modified for local conditions and an inspection of the school children was commenced in a methodical manner with a view to covering the whole field.

I excerpt the following information from these records

In the Government School of Ibadan the urine of 237 boys were examined for Schistosoma Haematobium on the 29th December. The ages ranged from four to eighteen. 174 were positive or a percentage of 73.

At the Wesley College Ibadan with ages from 16 to 21 twenty eight out of fifty four were positive or 52%.

The blood of 50 children of the Government School was taken haphazard and Dr.M.A.Barber of the Rockefeller Commission stained and examined the thick films prepared from them. He found 100% infection of the malarial parasite. The spleen rates I have dealt with under a special heading. The opinions of Dr.Glover and of Dr.Dale are that ascariasis is universal after the first few months of life, ankylostomiasis is considerably less, about 50%, and tape worm occurs only to a small extent and that only in Hausa children.

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SECTION II (CONTD)

Ibadan - Mosquito Survey.

The following information has been put at my disposal through the kindness of Dr. A.M. Walcott of the Rockerfeller Foundation. Some of it has been extracted from various reports of members of the Commission.

Anopheles gambiae are very common; in a hunt which brought in 613 mosquitoes, 419 were classified as such.

Taeniorhynchus (Mansonoides) africanus, which has been proved to transmit the yellow fever virus breeds out in considerable amounts in the streams in squares U:&, T:8, and Q:10 where the water cabbage (pistia) is growing in the sluggish flow. The imago is a vicious biter of man.

Another transmitter of yellow fever, the Aedes vittatus (sugans) breeds in rock holes in close proximity to the European Reservation.

In the town breeding goes on mostly in pots but on Government and Residency Hills this takes place in bamboo clumps and tree holes, particularly in flamboyants. In a recent census by Dr. H.W. Kumm of the Rockfeller Foundation there were found in the town 204 tree holes, 108 bamboo clumps, and 237 rock holes.

From the tree holes twenty two were taken at haphazard and their contents bred out. The results are given below. I also give corresponding figures obtained by Dr. T.B. Hayne.

	T		M		P	
	A	B	A	B	A	B
C. nebulosus	15	22	238	345	26.2	16.6
Ae. apicoargenteus	11	18	209	348	21.1	16.7
Ae. longipalpis	9	22	143	361	14.5	17.4
Ae. luteocephalus	7	11	144	158	14.5	7.6
C. horridus	4	8	119	148	12.2	7.1

T....Nos. of trees where obtained,
M....Nos. of adult mosquitoes bred out,
P....Percentage,
A....Dr. Kumm's results,
B....Dr. Hayne's results.

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T....Nos. of trees where obtained,
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P....Percentage,
A....Dr. Kumm's results,
B....Dr. Hayne's results.

Section II (Contd)

The following are the house index and breeding of mosquitoes collected in Ibadan in (a) Elekunrun, Oje market, Idiarare, Bere Court, and Ekoteddo (b) Sabongida quarter :-

	(a)	(b)
No. of buildings entered,	144	50
habitations,	176	50
buildings with breeding, %	68	16
habitations with breeding, %	70	16
pots containing water,	671	175
pots containing larvea, %	31	4
pots inside building containing water,	384	84
pots inside building containing larvae, %	43	90
pots outside building with water,	287	31
pots outside building with larvae, %	15	0
buildings with breeding inside, %	72	16
buildings with breeding outside, %	14	0
pots from which larvae were collected,	50	0
larvae bred out	1455	
Ae. aegypti, %	72	
C. nebulosa, %	8	
C. decens, %	15	
C. duttoni, %	4	

Ibadan - Spleen surveys.

Towards the end of 1st year two spleen surveys were carried out by the Medical Officer of Health :-

(1) Wesley College Ibadan. 29th October.

Age; sixteen to twenty-one.
Number; 54
Spleens palpable; 32,
Percentage; 59.

(2) Government School Ibadan. 29th December.

Age; four to eighteen,
Number; 282,
Spleens palpable; 148,
Percentage; 51.

For the sake of comparision with this survey and with these already carried out in the towns already reported on, a fresh survey was carried out and checked by these on two other schools :-

(3) Government School Ibadan. 5th June, 1930.

Age; four to fourteen,
Number; 275,
Spleens palpable; 58,
Percentage; 21.

(For analysis see below)

(4) Ojaigbo School Ibadan. 5th June, 1930

Age; four to fourteen
Number: 147
Spleens palpable; 26
Percentage: 16.

(For analysis see below)

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habitations with breeding, %	70	16
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pots containing larvae, %	31	4
pots inside building containing water,	384	84
pots inside building containing larvae, %	43	90
pots outside building with water,	287	31
pots outside building with larvae, %	15	0
buildings with breeding inside, %	25	16
buildings with breeding outside, %	14	0
pots from which larvae were collected,	50	0
larvae bred out	145	
Ae. aegypti, %	25	
C. nebulosa, %	8	
C. decens, %	15	
C. duttoni, %	45	

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(4) Otaigbo School Ibadan. 5th June, 1930.

Age; four to fourteen
Number: 147
Spleens palpable; 26
Percentage: 18.

(For analysis see below)

Section II (Contd)

(5) St. Peters School Areme. 5th June, 1930.

Age: four to fourteen
Number: 89
Spleens palpable 5
Percentage 6

(For analysis see below)

As compared to 1 and 2,3, 4 and 5 have very small spleen indices. The first two were taken at the end of the wet season and the beginning of the dry. 3, 4 and 5 were taken at the commencement of the wet season which this year has been considerably later than usual in beginning.

There is naturally a certain lag in the spleen rate as compared to the rainfall. Sir Malcolm Watson has shewn that the rate can change considerably owing to various causes in a short period of months.

I add an analysis of 3, 4, and 5. It will be noticed that there has been a seeming fall in the maximum age of the Government School. This actually is not so but I did not examine the older boys in order that these surveys should be comparable with those performed in the towns already reported on. (Spleen palpable = 1. Spleen not palpable = Nil)

(3) Government School Ibadan. Square M 14.

Girls younger: 1--1111—111-111---111---
total 25: spleens 14: rate 56%.
older: ---1----------
total 21; spleens 1; rate 5%
Boys younger: -11----11-111--11------1111
--1--------1-1----1----------1----1---
---
total 78: spleens 19: rate 24%
older: -1------1-------1--------11
----------111----------1-------
---1----------
---
total 126: spleens 10; rate 1%

(4) Ojaigbo School Ibadan. Square G: 12 = H: 12

younger
Mixed: 1--1--1-1-1--1--1-111111---1------1-1
1----------1-------1---------1-
total 71: spleens 20: rate 27%
older: ---1----------11-1----------
--1----------1------
---
total 76: spleens 6: rate 8%

(5)

Section II (Contd)

(5) St. Peters School Aremo. 5th June, 1930.

Age: Four to Fourteen
Number: 89
Spleens palpable 5
Percentage 6

(For analysis see below)

As compared to 1 and 2, 3, 4 and 5 have very small spleen indices. The first two were taken at the end of the wet season and the beginning of the dry. 3, 4 and 5 were taken at the commencement of the wet season which this year has been considerably later than usual in beginning.

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Girls younger: I—IIII—III-III—III
Total 25: spleens 14: rate 56%.
older: —I
Total 21; spleens 1; rate 5%
Boys younger: -II——II-III—II——IIII
—I———I-I——I———I——I—
Total 18: spleens 19: rate 24%
older: -I——I———I———II
—I———III———I———
Total 126: spleens 10; rate 1%

(4) Otaigbo School Ibadan. Square G: 12 = H: 12

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Mixed: I—I—I-I—I—I-IIIIII—I——I-I
I———I———I-
Total 71: spleens 20: rate 27%
older: —I———II-I———
—I———
Total 76: spleens 6: rate 8%

(5) St. Peters School Aremo. Square E.13

Mixed younger: .....1.....11
total 27: spleens 3: rate 11%
Mixed older: .....1...1...
.....
total 62: spleens 2: rate 3%

Ibadan - Malaria

The Rockefeller Foundation report that the A.gambiae breeds freely in Ibadan: in a hunt which brought in 613 mosquitoes, 419 were classified as such. A glance at the plan of Ibadan shows that nowhere is there a place which is more than half a mile away from a stream most of which are bordered by conditions suitable for the breeding of this mosquito. But even so the places further removed from the swamps are healthier than those nearer. Both the Government and the Ojaigbo School, close to stream or swamp and at low elevations have decidedly higher spleen rates than has Aremaw School on its hill at some distance from any water.

The high spleen rates amongst the younger children in all schools bear out the very high parasite index and show that the whole town is infected with malaria which infection is constantly kept up by the mosquitoes breeding within easy reach of every part of the town.

As reported elsewhere the prevalent type is the malignant tertian with quartan as an important second.

An analysis of the graph (Graph1) suggests the following explanation as to the yearly course of malarial infection. At the new year the rainfall is almost negligible. Because of the high temperatures and the high mean temperature, the swamps are drying up but there remains enough water to breed quite a number of mosquitoes.

In February there is slightly more rain which balances the drying up going on. Mosquitoes increase but the rise is not reflected as yet in the malarial curve.

In

Section II (Contd)

(5) St. Peters School Aremo. Square E.15

Mixed younger: .....I.....II
total 27: spleens 3: rate 11%
Mixed older: .....I...I...
.....
total 62: spleens 2: rate 3%

Ibadan - Malaria

The Rockefeller Foundation report that the Anopheles breeds freely in Ibadan: in a hunt which brought in 615 mosquitoes, 419 were classified as such. A glance at the plan of Ibadan shows that nowhere is there a place which is more than half a mile away from a stream most of which are bordered by conditions suitable for the breeding of this mosquito. But even so the places further removed from the swamps are healthier than those nearer. Both the Government and the Ojaigbo School, close to stream or swamp and at low elevations have decidedly higher spleen rates than has Aremaw School on its hill at some distance from any water.

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In March the rainfall increases somewhat so that with the steady high temperature the swamps begin to get wetter; mosquito breeding increases and the malarial curve begins to show a rise due to the February breeding.

In April the rainfall remains heavy and the temperature is beginning to drop. The malarial curve still rises as the result of the March infections. Larvae are beginning to be washed away by the rain.

In May the same conditions in the breeding places are going on but more intensely. The infection is not increasing owing to the adverse conditions of April.

In June and especially in July conditions are becoming more adverse to breeding, and with the slight drying of the swamp edges due to the very low August rainfall and the continued low temperatures, malaria declines in August and September. Because of the large swamp areas and the fact that low temperatures are low only relatively there is still a good deal of breeding and consequently, the malaria, though less, is still serious.

During August and September come the secondary rains accompanied by a rising temperature. Breeding conditions are at their most favourable as is reflected in the sudden rise of the malarial curve to reach its highest in November and December.

But during these months the rainfall drops to a minimum, the swamps dry up really seriously, with the reflected fall in malaria from December to its minimum in February.

Ibadan Township

The township occupies a small area in the vicinity of the railway station and includes the various government offices, the chief stores of the European, trading firms, the banks, the European and the African Hospitals, and part of the European residential area.

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The

Section II (Contd)

The Medical Officer of Health and the Chief Sanitary Inspector are the same as for the Native town but have under them a separate staff consisting of

1	1st Class	African Inspector
1	2nd Class	-ditto-
2	3rd Class	-ditto-
33	Labourers	
2	Headmen	

The area is treated as a complete whole and each inspector has specific duties. The staff is adequate as is seen from the well-kept condition of the township.

Conservancy is by a bucket service, the excreta being disposed of by trenching. 16 of the labourers are engaged on this work at 1/3 a day, under a Headman at 1/6d a day. A monthly charge of 10/- is made for each set of premises.

Refuse is collected by eleven labourers who received 10d. a day under a headman at 1/2 a day. Collection is made from the houses themselves and the refuse is burnt in six incinerators tended by six incinerator men at 10d. a day. The incinerators are situated :-

King's market	£60- type,
Old barracks	ditto,
Onereke road	bush type,
Railway siding	ditto,
African Hospital	ditto,
Near the court house	ditto.

There are no drying sheds. They all work efficiently.

Water supply is from shallow wells fitted with proper parapets, covers, surrounds, and pumps. Houses mostly use rain water conserved in tanks.

There is a modern slaughter house in square X:5 consisting of a building with two large rooms with concrete floors draining into an adequate concrete gutter. Water from a piped supply is laid on in both rooms. The drain is led away to a trenched irrigation scheme where it works without causing any nuisance. The offal is trenched and buried in the same area and a crop of maize was being grown on it. There is a concrete

slab

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Cheteke road	bush type,
Railway siding	ditto,
African Hospital	ditto,
Near the court house	ditto.

There are no drying areas. They all work efficiently.

Water supply is from shallow wells fitted with proper parapets, covers, surrounds, and pumps. Houses mostly use rain water conserved in tanks.

There is a modern slaughter house in square X:5 consisting of a building with two large rooms with concrete floors draining into an adequate concrete gutter. Water from a piped supply is laid on in both rooms. The drain is led away to a trenched irrigation scheme where it works without causing any nuisance. The offal is trenched and buried in the same area and a crop of maize was being grown on it. There is a concrete

slab

slab adjacent to the building where the joints are cut up.

The Dugbe market occupies a large area in Square X: 7 on slop ground under the trees. The stream in the depression has been cleaned and made into a proper earth drain, the irregularities in the banks have been corrected, various borrow pits filled in, and the bush cleared.

There are many high stalls with corrugated iron roofs and cement sorrounds in which maize in sacks is stored.

There is a special meat-vendors' stall with concrete floor and benches. Unfortunately the meat trade has increased to such an extent that it overflows into an adjacent stall which is not suited for it.

Most of the petty trading is done as usual by people sitting on the ground near their wares. This includes food but not meat.

There is at the edge of the market a properly kept pail latrine for men and for women, and as has been reported an incinerator. When I visited the market at the height of its work, I noted how very little refuse there was strewn around; that which there was, was obviously the result of that morning's trade.

Section II (Contd)

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SECTION II. (Contd)

ABEOKUTA: HISTORY.

At the end of the eighteenth century the kingdom of the Yorubas stretched across the whole of what is now the south west of Nigeria. It was convulsed by rebellion and in 1830 the Egba Tribe attained to independence by force of arms. Until the end of the nineteenth century this people was fully occupied in defending its newly won country from the incursions of the Dahomies from the West and the Oyo nation from the east. As the latter began to crystallise about what had been the Egba village of Ibadan, the Egbas founded Abeokuta as their capital.

With the advent of the British in the last decade of the century the tribe settled down to a peaceful existence. The old spirit still slumbers under the placid exterior as is proved by the unsuccessful rising in 1918 and the temporary tension which arose in 1927.

Although sanitation has been an innovation of the last few years, the blame for the rising is sometimes attributed to the dislike of the people for the sanitary measures which were being imposed upon them.

ABEOKUTA: GENERAL DESCRIPTION.

Abeokuta, the capital of the Egba tribe of the Yoruba people, has an estimated population of more than 60 thousand.

It is situated 65 miles to the north of Lagos and 44 miles to the south west of Ibadan. It is connected to Lagos by tarmac road, and railway. Roads also run to Aiyetoro, Ibadan and Ijebu Ode, west, north east and south east respectively.

The town is about 400 feet above sea level in a land of palms and elephant grass. Meteorological statistics are given on ~~page~~ ~~in connection with~~ the graph of the prevalence of malaria. [Graph II]

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It has the reputation of being hot because of the many outcrops of granite which form sudden boulder-strewn hills in the town area. Maximum and minimum average temperatures are not much different from those of Ibadan but the average relative humidity is slightly higher.

Prevailing winds are from the south and south east.

ABEOKUTA: GEOGRAPHY.

Abeokuta is the Rome of Yorubaland, it is founded on seven hills and all roads lead to it. The name itself means under the Stone. These stony hills in between which are crowded the houses account for the large area which the town covers compared to its population; for simplicity's sake I have numbered these hills I to VII.

To the north is the waterworks hill; the northern limit of the town does not encroach on it. South of this are the Oluma juju rock and the hill on which stands the Afin and the Roman Catholic Institutions; South again three more hills parallel the road from Lafenwa Railway Station to the main cross roads (M:21) and on to Asha. There are two further hills to the south of this road, the eastern of which the road rises to cross at its northern extremity.

The Iberekudo road meets the Lafenwa road between hills III and IV and the Ibadan road from between IV and V. The town stops short a little south of the Lafenwa road but extends slightly round the flank of hill VII along the Ijebu Ode road.

The European Quarter is the suburb of Ibarø a mile south on this # road.

The river Ogun runs down the whole of the west side of the town. The limit of the houses is from half to a quarter of a mile actually from the stream as this rises more than twenty five feet at the height of the rains.

Lafenwa with its market and railway station on the west bank,

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The European Quarter is the suburb of Ibara a mile south on this * road.

The river Ogun runs down the whole of the west side of the town. The limit of the houses is from half to a quarter of a mile roughly from the stream as this rises more than twenty five feet at the height of the rains.

Lafenwa with its market and railway station on the west bank,

bank, is joined to the town by a girder bridge across which runs the Lagos road.

ABEOKUTA: THE PEOPLE.

The Egbas are noted as a tribe for their sharpness in trade and their lack of bodily strength; their wits rather than their muscle have placed them in the position which they now occupy. They are pagans but the Christian fraternity is very strong, the Alake himself being a professing Christian.

He is an enlightened ruler and before ascending the throne had held a clerical post in the Public Works Department. In the company of his father he was one of the first, native ruler to visit London in 1904. The result is that Abeokuta has the reputation throughout Yorubaland of being twenty five years ahead of anywhere else, a reputation which in sanitary matters at any rate it justly deserves.

The town is the trading centre of a very large area; in addition to their trade the people all own farms in the vicinity so that the place is self supporting as regards food. In the estimated population of 60 thousand, the men were taxed 6/- and the women 3/- per head last year. The town is most famous for its dying industry, (Fig.VII) as has already been said this is of considerable importance in all the towns already reported on, but actually Abeokuta is the headquarters of it.

As a result of the prosperity of the town, it cannot be conveniently divided up into so many compounds as in other towns as a very large number of persons own their own houses. Thus instead of several distinctly marked out compounds there are numberless independent houses mostly with corrugated iron roofs. These houses sometimes group together in threes and fours but rarely in larger units.

As elsewhere the women outnumber the men, here in the proportion of two to one. A man averages two or three wives who each bear him seven or eight children of whom four to six die before puberty.

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The town is divided politically into four divisions under chiefs who rule through the ward heads. The sanitary divisions coincide with the political.

The town is under a Native Administration but the Public Health Ordinance is nominally enforced by the Alake. The qualification of "nominally" requires explanation. The attitude of the people is very conservative; there is no difficulty in getting them to keep to a line of conduct once they get used to the idea of it. But it is very difficult to introduce new ones or to replace long rooted customs by the more modern.
As an illustration of this may be cited the extraordinary cleanliness of the town, which the people keep up with comparatively little driving from the authorities. On the other hand the butchers have always killed their meat in numberless places in the surrounding bush, and therefore they are allowed to continue to do so in spite of the impossibility of supervision under these circumstances. It is therefore obvious that the present policy of the drip which constantly wears away the stone, rather than that of shock tactics, obtains the better result in the long run. With this explanation it will be understood why the Public Health Ordinance is put into force under certain circumstances, and why it is honoured in the breach in others.

ABEOKUTA: PRESENT WATER CONDITIONS.

The River Ogun runs down the whole of the west side of the town; in the dry season it is a small meandering stream in the bottom of a wide bed in which there are many islands made up of low sand banks and rocks. On the low banks there are marshes and in the dryer ground small gardens. These banks rise more or less gently. During the rainy season the river rises fairly slowly the level creeping up the banks inundating the dry season

swamps

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Section II. (Contd.)

swamps and converting in turn the dry-weather gardens into marshy land. At the height of the rains, the river is a broad swiftly flowing stream lined on either side by a belt of swampy land which varies from a few feet to a hundred yards or more. The limit of the houses is that of this wet weather marsh. During the dry season this land is completely dried up. The total rise of the river is more than twenty five feet.

In very few places is the depth of soil in the town more than a few feet. There are in consequence many seepage springs when it begins to rain. The many streams leaving the town between squares U:14 and Y:23 are the results of these. They are dry half the year and the rest of the time are merely drains. These banks are cleancut and their courses contain but little vegetation.

The most important stream is that rising near the Alake's palace, which skirts the east and south sides of the town. In its course between square D:19 and F:28 it runs along a fairly wide valley bottom and has a fifty yard belt of swamp on either side of it. Beyond F:28 it enters rugged country and has a clearcut bed between boulders and sharp banks until it approaches Residency Hill. Before it crosses the Ibara road it runs through a small swampy area in squares O and P, 28.
This swamp extends a hundred yards southwards into the vicinity of the prison (P:29). Its course is again cleancut until it receives a tributary in square S:26. From there to the Ogun river it has a belt of wet ground of some fifty yards across through which it flows sometimes on one side sometimes on the other. It receives a similar marshy tributary from the south in square W:27.

Before entering it the tributary from the north passes through a marsh in squares M, N, O, 25 and 26 which is overgrown by bush.

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Section II. (Contd.)

The stream draining the centre of the town has a marshy left bank from square M:13 to M:17. The right bank is formed by the granite side of Hill IV.

The stream running round the north side of the town has a fifty yard belt of marsh through which it flows from square H:7 to M:3.

It will have been remarked that in comparison with the other towns already dealt with, there is very little marshy land in the town itself; this is due to the rocky valleys through which most of the streams flow; except in the few places described the fall is considerable.

The water drainage problem of the town is the left bank of the River. The right bank is also of importance at Lafenwa as here is a market. It is situated on a narrow ridge of dry sand jutting out into the marsh formed by the river bank.

There are waterworks to the north of the town. Water is drawn from the river and is pumped up into a reservoir on the top of a hill from which it is fed throughout the town. There are standpipes in not infrequent numbers. These standpipes are of the quadruple pattern, the water being turned on by pressing a knob against a spring which shuts off the water when the pressure on the knob is released. As elsewhere with this pattern there is considerable waste of water from leaking drips. The standpipe is surrounded by a raised level concrete platform on to which the drips and waste water flow. These platforms are not drained in any way so that the waste water finds its way on to the surrounding ground to form muddy pools.

The water before delivery into the town passes through Bell's filters and is chlorinated. It has been found that the water may on occasions become very muddy and that the quality is not above reproach. The whole system is

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now being replaced by an up-to-date new installation. The engineers will begin work on it in August of this year.

Abeokuta: Conservancy.

This presents a very real problem in the town. As has been mentioned elsewhere the depth of soil lying on the rock is very shallow throughout the town. This precludes the proper construction of pit latrines as there is not sufficient distance down to the rock. In spite of this there are a fair number of private ones in the town; several of them are in an offensive state as regards smell; but the underlying rock stops the pit acting as a permeable cesspit and converts it into a shallow impermeable one. Under the circumstances this is better than the countenancing of indescriminate defoecation.

The policy is to provide public pail latrines at as many spots as possible. As the money becomes available new ones are put up. This cannot go on for ever as the places of soil where the contents can be buried or trenched is very limited. The lack of roads in the town outside the main roads precludes the use of motor collection and disposal of the excreta in a properly organised trench farm outside the town.

In spite of this very difficult situation there is very little foeces lying about. True one does meet it occasionally in small patches of bush but this is very much the exception. The dried water courses and the streams are clear of it. This is all the more apparent as the town reported on last was Ibadan, in comparison with which Abeokuta is a pleasant surprise. The Alake gives full support to the keeping clean of the area although

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although he is well aware of the excuses which defaulters might make. These are not accepted by him and the result is that the people find the means of proper disposal and have now developed the habit to a certain extent.

There are at present eleven public pail latrines, each ofwhich is looked after by attendant. In the European quarter, there is a pail service for which a monthly fee of 2/- is charged per pail. Service is given twice daily.

ABEOKUTA: REFUSE DISPOSAL.

As with the conservancy aspect of cleanliness, the town is comparatively clean as far as refuse is concerned. This is however a recent practice.

Cleaning up was started before the arrival of the Plague Commission. Labour was provided by them which went round all the yards,houses etc. at regular intervals, cleaned up all refuse and took it away for disposal. Now that the days of economy are on us and the Plague Commission with its labour force has gone, it becomes necessary for the householders to to their own collecting. They do not see why they should considering that it was done for them in the past.

With the support of the Alake, pressure is being tactfully applied and the idea is beginning to sink in. There are 27 incinerators spread more or less evenly over the town and a considerable amount of the town's garbage is burnt. There remains a lot which is not. But even so the litter in yards and public paths is not very marked; compared to Ibadan it might be said not to exist. There are several litter dumps in pieces of convenient bush, but again they do not meet one at every turn of the path through waste ground.

There are twenty seven incinerators of which three

are

Section II. (Contd.)

are

SECTION II. (Contd)

are of the permanent £60 type. Ten are beehive, the rest of a semi-permanent type. The present practice is to build as many beehives as possible as they cost £1 a piece and are perfectly satisfactory although comparatively short lived. The immediate problem is to get rid of the refuse. Later when there are enough of them and money becomes available they will be replaced by permanent structures.

ABEOKUTA: MARKETS.

There are eight markets at

Onida	(T:31)	at Ibara
Shapon	(M:21)	
Ijaye	(F:24)	
Itoko	(J: 7)	
Adatan	(D: 8)	
Iberikodo	(R: 3)	
Itoku	(P:20)	
Lafenwa		

with the exception of the Lafenwa, Iberikodo and the Shapon markets, the others extend as long narrow strips along the road sides. In the three markets mentioned there are large areas devoted to the trading but even so petty buying and selling goes on along the road.

All the markets are provided with small stalls of thatch supported on tree branches roughly smoothed down. Sometimes the floors are of stone or cement. There is no proper drainage of such floors. It is with considerable difficulty that the paths through the markets are kept clear as the women all try to push their own wares a little more to the front than those of their neighbours. In all cases there are market masters but the moment his back is turned, back come the wares into the path.

A considerable amount of draining is being carried out in Lafenwa market so that in spite of the surrounding

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A considerable amount of draining is being carried out in Lafenwa market so that in spite of the surrounding swamp,

Section II. (Contd.)

swamp, the market itself is dry.

All markets have their incinerators and collecting enclosures which generally are not covered over.

There are no proper meat stalls although attempts are made to limit the sale of meat to tables. The meat problem is as yet too new to have received support from the Alake in its solution.

Abeokuta: Slaughtering.

There is a very well designed slaughter place in square X:21. The concrete floor slopes to a concrete gutter which drains directly into the river. Water is laid on for its cleansing. It is surrounded by a corrugated iron fence and has at one end a concrete room for an office and shed for the caretaker. Immediately outside it is an incinerator.

Slaughtering has been carried on in the past in the bush around the town. I saw one place in square T:8. The place ~~beside~~ is simply a worn clearing in the grass, the floor being the muddy and fouled ground. The buyers of the portions of the carcases carry them away to the stream in S:15 or to a convenient boulder strewn beech in square T:7 where the meat is washed in the stream or river water. Bones lie around in the bush and there is no sanitary control over it at all. After the opening of the slaughter place in square X:21 an order in court was obtained to close this spot. The Alake when he saw it, tore it across with the result that nothing more was possible. The butchers have realised that there is no control of these places and the slaughtering at them is in consequence on the increase.

Abeokuta: Malarial Position.

In September and October of 1928, Dr.T.B.Hayne of the Rockefeller Foundation conducted a survey of a hundred compounds in the town as the result of four

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Absolute: Slaughtering.

There is a very well designed slaughter place in square X:21. The concrete floor slopes to a concrete gutter which drains directly into the river. Water is laid on for the cleansing. It is surrounded by a corrugated iron fence and has at one end a concrete room for an office and shed for the caretaker. Immediately outside it is an incinerator.

Slaughtering has been carried on in the past in the bush around the town. I saw one place in square T:8. The place ~~beside~~ is simply a worn clearing in the grass, the floor being the muddy and fouled ground. The buyers of the portions of the carcasses carry them away to the stream in S:15 or to a convenient boulder strewn beach in square T:7 where the meat is washed in the stream or river water. Bones lie around in the bush and there is no sanitary control over it at all. After the opening of the slaughter place in square X:21 an order in court was obtained to close this spot. The Alake when he saw it, tore it across with the result that nothing more was possible. The butchers have realised that there is no control of these places and the slaughtering at them is in consequence on the increase.

Absolute: Material Position.

In September and October of 1928, Dr.T.B.Hayne of the Rockefeller Foundation conducted a survey of a hundred compounds in the town as the result of four

suspicious

Section II. (Contd.)

suspicious cases which were reported as query yellow fever. By the kindness of the Director of the Yellow Fever Commission, Dr.Henry Beeuwkes, I am enabled to extract the following information from his report.

> "The blood of 150 children was examined from two schools and malaria parasites found in 115 (76.6%) of them. Sixty-six of the above, ages between 6 and 10 years, were from the Imo school and 54 (81.9%) were positive. Of the 84 boys, ages 12 to 19 years, examined at the Grammar School. 61 (72.6%) were positive and all were E.A. (P.falciparum). Only one of the slides showed Benign Tertian (P.Vivax) forms, all of the remainder being Estivo autumnal (P.falciparum) rings.
>
> In many of the slides only a few rings were found, and it is interesting to note that in the positive slides only one crescent was found."

The above total parasite index of 76.6% tallies with my result of 78.9%, as obtained in a small sample of 38 girls of the Baptist Mission School.

The following are the results of Dr.Hayne's house-larval survey :-

Number of buildings entered	75	
Number of Habitations	170	
Number of buildings with breedings	37	49%
Number of habitations with breeding	54	32
Number of pots containing water	475	
Number of pots containing larvae	83	17%
Number of pots inside building containing water	183	
Number of pots inside building with larvae	54	29%
Number of pots outside building with water	292	
Number of pots outside building with larvae	29	10%
Number of buildings with breeding inside	35	46%
Number of buildings with breeding outside	12	16%
Each building averaged 2.2 families		
Rooms per building	7.8	
Rooms per family	3.4	
Number of rooms entered	591	

The following imagos were caught inside the 591 rooms :-

	Male	female
C. nebulosa	97	128
A. gambiae	7	54
Ae.aegypti	8	15

Of twenty-one pots taken from these houses there were bred out from larvae contained therein 218 male and 235 Ae.aegypti and nothing else. From two pots nothing but C.nebulosa bred out namely 312 male and 282 female.

The habits of the A.gambieae must be remembered when reading the imago-catch. I presume this was conducted during

Section II. (Contd.)

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The habits of the A.gambiae must be remembered when reading the image-cadon. I presume this was conducted during

Section II. (Contd.)

during the day. The adult is known to invade the houses at nightfall to feed and to leave generally shortly after day-break. One is therefore justified in suspecting that at night there are many more in the houses. Although we have no mention of A.funestus I do not think that these can be ruled out of consideration. The adult is of even stricter habits and generally leaves the house very shortly after feeding. Although the larvae have not been reported, the difficulty with which they are caught is almost proverbial. I have caught none in Abeokuta but found them, as reported, at Oshogbo.

I stress this question of the A.funestus as the malarial curve in the accompanying graph II is of interest. The curve is the average of the monthly total of new in- and out-patients admitted to the Sacred Heart Hospital from 1927 to 1930 inclusive. There is the usual one to two months lag after the rainfall. In some parts of Africa where there is malaria all the year round but an increase with the rains, it has been found in several cases that the rainy-season-increase is due to the appearance of the A.funestus whereas the steady all-the-year-round incidence is due to the A.gambiae. In other parts of the continent apparently exactly the opposite is the case. It will be of interest to know what happens in Abeokuta.

The graph, shows that there is no relation between the average maximum and minimum temperatures, the relative humidity, and the malarial incidence.

I also include the mosquito index for last year. This year's readings so far show a uniform rise from January to June.

Abeokuta: Infections and Other Diseases.

The following are the principle diseases which report to the hospitals for treatment. They are taken from the records of the Sacred Heart and the African General Hospitals:

Amoebic

Section II. (Contd.)

Amoebic

Section II. (Contd.)

Amoebic Dysentery
Conjunctivitis
Ear affections
Bronchitis
Acute nephritis
Cellulitis
Syphilis
Gonorrhoea
Chronic rheumatism
Stomatitis
Congenital debility and marasmus
Infantile convulsions
Infantile diarrhoeas and enterica
Ascariasis.

As no microscopic examinations have been possible as yet in the hospitals, and as there have been no school surveys, it is impossible to say what is the incidence of bilharzia and ankylostomiasis.

Miss J.McCotter who is in charge of the Maternity and Infantile Welfare Clinic states that there is a considerable amount of rickets in the town, also tetanus.

Smallpox is prevalent especially in the dry weather, and there is a good deal of chicken pox about.

In the latter half of 1928 four cases suspeciously like Yellow Fever were reported; they were investigated by Dr. Hayne and serum taken in three cases. In none of these was it possible to infect monkeys, and the serum taken during the convalescent stage gave no protection to these animals. The fourth case died before examination but autopsy showed the cause of death to be due to pyelonephrosis and septicaemia.

Thanks to the kindness of Dr.A.M.Walcott I saw one case of Kukuruku Disease.

Abeokuta: Schools.

There is a large school population in the town but unfortunately on my arrival the schools broke up. I was not able therefore to carry out my usual inspections as to spleens, foeces, and bloods. I found the Baptist Mission Girls School still sitting and was able to get a small sample of the girls both for spleen and blood examination.

The

Section II. (Contd.)

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Conjunctivitis
Ear affections
Bronchitis
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Section II. (Contd.)

The results obtained must be accepted as typical of Abeokuta with several reserves. Although the girls live at the school from September to July, many of them are drawn from places as far away as Sapele. The school itself is situated on an open hill two miles out of Abeokuta and at a considerable distance from running water. However with these remarks I give the results for what they are worth.

Of 38 thick blood films stained by Geimsa's method 30 showed malarial parasites which gives a blood index of 78.9%.

The spleens were examined in the usual way, the children being lined up according to height up to the age of puberty. Commencing with the small ones the results were:-

(Spleens palpable = I Spleens not felt = -)

11-1------1---1--------11-. Total 26; S.I.27%.

The sample was too small to break it up into older and younger children.

It being a girls' school, it was not possible to ask for foeces for examination.

Abeokuta: Maternity and Infant Welfare.

Last year the Native Administration opened a clinic for infants, expectant and nursing mothers under the control of Miss J.McCotter. It has a two storey building to itself in which the clinic is open daily from 6 a.m. until 1 p.m. Miss McCotter has trained four native health visitors who go round the town and get the women to come to the clinic. She has also trained, or in training, six midwives whom she has recruited from the girls leaving the upper standards of the mission schools. These all assist at the daily clinic. They also conduct cases in the homes. Ante-natal examination is carried out from the 6th month onward and if any lie is abnormal or the mother's condition is in any way pathological, she is referred to one of the hospitals.

Mothers

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Abeokuta: Maternity and Infant Welfare.

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Ante-natal examination is carried out from the 6th month onward and if any ill is abnormal or the mother's condition is in any way pathological, she is referred to one of the hospitals.

Mothers

Section II. (Contd.)

Mothers are advised, the babies are inspected daily and any adverse conditions are rectified. This includes proper advice on the care of the baby, the giving of cod-liver oil to both mother and child, and the treatment of the latter for chills which are very common as the result of the native custom of cooling the baby's hot back by dipping it into cold water. It is impossible to give a description of the work carried on, which could occupy a small space, and yet do it justice. The great increase in attendances shows that the people feel the heed of the work. There were almost six thousand attendances last month although the Native Administration now insists on payment of a fee of a penney a week; these results are all the more noteworthy when it is remembered that the people are passing through a period of financial stringency consequent on the recent plague of locusts.

Abeokuta: Hospitals.

There are two Hospitals, the older being the Sacred Heart Hospital in connection with the Roman Catholic Mission. It specialises on the side of women's diseases and maternity work. It is now in charge of Dr.A.E.F.L.Forbes with Miss J.M.Garvey as Sister in charge.

The African Hospital (H:23) has just been opened and is under the care of Dr.W.Nelson. A European Nursing Sister is about to be appointed to the hospital.

There is an Infectious Diseases Hospital about a mile to the north of the town. It is enclosed in a high wall and consists of two high mud houses faced with cement and with corrugated iron roofs. One building contains several single cubicles opening on to a common verandah, whereas the other has several double rooms opening in front and behind on to a closed-in corridor.

As yet there is nothing but a pathway to it so that in

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The African Hospital (H:25) has just been opened and is under the care of Dr.W.Nelson. A European Nursing Sister is about to be appointed to the hospital.

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the event of an epidemic there would be some difficulty in removing infectious cases to it as the only means of getting them there is on their feet.

Abeokuta: Sanitary Staff and Their Duties.

Under the Medical Officer of Health there are:-

1	European Sanitary Inspector	
3	Second Class Inspectors	£7. 6. 8 p.mens.
1	Third Class Inspector	4. 0. 0 -do-
1	N.A.Senior Sany:Inspector	6. 0. 0 -do-
6	N.A.Sanitary Inspectors	1.10. 0 -do-
3	Vaccinators	5. 0. 0 -do-
98	Labourers	from 25/- to 30/- do-

There are four Sanitary areas and the staff of Inspectors is divided up amongst them. The labourers are divided up one man to two incinerators, one man to each public latrine, market keepers, rat-catchers and general sanitary labourers.

The duties of the inspectors are the usual ones of checking of nuisances, mosquito breeding, etc.

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Section III - Recommendations.

Para 1. Water Supply

" 2. Canalisation of Streams

" 3. Bush Clearing

" 4. Open Air Baths

" 5. Laundry Benches

" 6. Conservancy

" 7. Refuse Disposal

" 8. Slaughter Houses

" 9. Meat Markets

" 10. General Markets

" 11. Schools

" 12. Teaching, Propaganda etc.

" 13. Dispensaries

" 14. Maternity and Infant Welfare

" 15. Infectious Diseases Hospital

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" 17. Compound Inspection

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" 16. Sanitary Staff
" 17. Compound Inspection

Section III.

1. Water Supply.

The only possible recommendation under this heading is an up-to-date adequate supply regardless of the cost. It is essentially the keystone to the arch of sanitation and without it, the whole crumbles to the ground.

In the towns considered there are several plans in existence, one undergoing construction at Ife, that at Abeokuta being replaced by a more modern and more complete installation, and that at Oshogbo fully planned and awaiting the allocation of funds. Ibadan has two or three small pipe lines which are purely local, but Mr.H.G.Peake of the Public Works Department has worked out a complete scheme for obtainig water from the Ọṣun River, 20 miles away.

Ẹdẹ has not yet been considered, but the conditions are very similar to those of Oshogbo with minor differences which are considered in section IV para 1.

In all cases the aim will be defeated unless sufficient water points are put in. Water is to be supplied not solely for drinking but for all purposes. Although I have been assured that the public will draw their water from the water points, they are almost certain to keep their wells open for drawing water rather than make several journeys involving the carrying of heavy pitchers over considerable distances. Even were they to do this, the tendency will be to reduce these journeys to the minimum and to hoard water on the premises; the present water nuisance will remain.

A small point but one of great importance is the design of the standpipe taps. That so far used in Lagos, Abeokuta and Ibadan consists of a knob working against a spring. When pressure is released the tap shuts off the water. Unfortunately this type is notorious for its leakage through dripping after its first newness has worn off.

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These

Section III. (Contd.)

These drips are not only wasteful but keep up constant moisture round the point which encourages mosquito breeding.

There is on the market an anti-waste tap which closes itself automatically and which precludes all drips. The manufacturers catalogue quotes it at 15/- which is the same price of the wasteful pattern when both are for ¾ inch pipes.

I recommend that none but these anti-waste pattern taps be used at any public water point and that the present type be completely superceded by them.

All points should have a proper concrete surround draining to a central gully which in turn carries the water either to a soakpit or to a drain. In Abeokuta and Ibadan, at present there is no attempt to keep the ground dry at the points with the result that this lack of drainage combined with the permanent drips from the taps provides an admirable source of mosquito breeding.

2. Canalisation of Streams.

In the terms of reference of this investigation canalisation is not included but as complete sanitation is what is aimed at, it must be considered here. In all the towns under consideration there are swampy areas, some covered with bush, others not. In all cases Culex and Aedes breed in the refuse puddles and backwaters in large numbers.

The swampy bush is used by the African as his latrine and refuse tip; if he is deprived of this cover, and is supplied with a sufficient number of latrines and incinerators the present nuisance of fly breeding will die out to a large extent.

Then one may confidently look for a reduction in malaria, filariasis, helminthiasis and yellow fever, and also indirectly dysentery and diarrhoea.

The proposed canalisation of streams and their subsidiary contour drains are shown on the various town plans. They are to be considered as approximate only as the actual siting will depend on levels taken on the spot, the fall

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Section III. (Contd.)

of the stream under consideration and such engineering features.

Where the fall is sufficient, canalisation should be such as to drop the level of the stream bed about four feet. This in itself will dry considerable areas of swamp on either side. It will also enable earth contour drains to be sufficiently deep and yet have a satisfactory fall.

In places where space is a consideration such as the water course along the main Ifẹ road through the heart of the town of Ẹdẹ, the canalisation will necessarily be one of masonry or concrete, of a large cross section. In others, such as the shallow valley beds to the north and south of the main ridge of the town of Ifẹ, a central concrete channel with the valley bed levelled of and sloping towards the channel, with wire grass turf on either side for some fifty feet, will be more satisfactory and considerably cheaper. The central channel is designed to be large enough to deal with the normal dry season flow (the flow half way between the cessation of the rains and their onset again) whereas the turfed belts on either side allow for a stream bed during the rains. Sir Malcolm Watson's experience in the Federated Malay State proves that turf is strong enough to prevent erosion of such a channel to any large extent.

When such turfed belts are employed, a line of subsoil drainage pipes should run close to and parallel to the central channel and open into it at regular intervals.

Where the fall is small as with the Ogunpa river in Ibadan, one must fall back on maintaining the stream bed, building up the banks with masonry or concrete and filling in behind these. These fills will naturally require proper levelling and earth-draining.

All these schemes are referred to in section IV.

Wherever possible, all concrete or masonry drains should be of the "half-egg", section similar to that used in the major sewers in England, for the same reasons: they are

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Section III. (Contd.)

self cleansing whatever the flow in them. In Appendix III I give a rough sketch of such a drain passing through a valley bottom.

It has been difficult to estimate prices for such works. In every case the maximum wet season flow and the medium dry weather flow must be determined in order that the proper size of drain should be built. The smallest I estimate 18 inches deep and eighteen inches across at the bottom, the largest at 8 ft for both measurements. The former costs £1 per yard run and the latter £10 per yard run in concrete. In my estimates Ihave taken the mean at £5 per yard run regardless of the size of the stream. In my opinion I think this is a fair thing to do.

Concrete is twice as costly as masonry but except in larger works such as the Ogunpa stream in Ibadan, it prevents a clean flow through the channel which tend to get silted up. In the larger works, however, I think it would give as satisfactory results as the concrete at a cheaper cost.

In all cases of earth drains I have planned for these to be contour rather than herringbone. With sufficient outlets into the main channel there is no need for these to be larger than 18 inches deep, 3ft broad at the top and 18 inches at the bottom. These cost £44 per mile run.

For the subsoil pipes there is the choice of concrete or earthenware. In certain waters the concrete erodes and the pipe line becomes useless; earthenware does not suffer from this drawback. These 1ft lengths of unglazed pipe may be made locally by unskilled labour with very little practice and consequently work out considerably cheaper than do similar ones in concrete.

Pond Filling. The main uses of the ponds are for laundry and for brickmaking. Below I propose that proper public laundry places be set up. If a man wishes to start a brick-making industry he should be compelled to keep his pool clean

at

Section III. (Contd.)

self cleansing whatever the flow in them. In Appendix III I give a rough sketch of such a drain passing through a valley bottom.

It has been difficult to estimate prices for such works. In every case the maximum wet season flow and the medium dry weather flow must be determined in order that the proper size of drain should be built. The smallest I estimate 18 inches deep and eighteen inches across at the bottom, the largest at 8 ft for both measurements. The former costs £1 per yard run and the latter £10 per yard run in concrete. In my estimates I have taken the mean at £5 per yard run regardless of the size of the stream. In my opinion I think this is a fair thing to do.

Concrete is twice as costly as masonry but except in larger works such as the Ogunpa stream in Ibadan, it prevents a clean flow through the channel which tend to get silted up. In the larger works, however, I think it would give as satisfactory results as the concrete at a cheaper cost.

In all cases of earth drains I have planned for these to be contour rather than herringbone. With sufficient outlets into the main channel there is no need for these to be larger than 18 inches deep, 3ft broad at the top and 18 inches at the bottom. These cost £44 per mile run.

For the subsoil pipes there is the choice of concrete or earthenware. In certain waters the concrete erodes and the pipe time becomes useless; earthenware does not suffer from this drawback. These 1ft lengths of unglazed pipe may be made locally by unskilled labour with very little practice and consequently work out considerably cheaper than do similar ones in concrete.

Pond Filling. The main uses of the ponds are for laundry and for brickmaking. Below I propose that proper public laundry places be set up. If a man wishes to start a brick-making industry he should be compelled to keep his pool clean

at

Section II. (Contd.)

at the edge and to be water-tidy. If he cannot do these things the pond should be filled in.

Naturally following on from this is the necessity to obtain permission before making a borrowpit in any place public or private. The sanitary authority must then advise as to how it should be done so that no water shall accumulate in it. All existing borrowpits on private premises should be filled in by the owner within a stated reasonable time. The present system of dealing with reluctant owners should be continued which consists in carrying out the work by the sanitary authority and recovering the outlay.

Where the pond is in reality a spring, the pond itself should be filled up and the spring canalised from the bricked in source.

Filling costs vary according to the distance the spoil must be carried.

If within 100ft 9d per cubic yard
" 200 10d "
" 300 11d "

The filling in, canalisation and brick work in connection with the springs which throughout the area are much the same size costs approximately £75.

These primary works will require to be followed up with constant supervision of the drains, repair of any erosions, keeping the drain turf cut and continuous, preventing undergrowth once more appearing, and tree stump filling.

3. Bush Cleaning.

All bush should be cleared on principle from the area of the town and for a belt of 250 yards around the town edge. In compounds and private ground this may be done by private enterprise, checked up by the inspector in his weekly inspection.

Although expensive in primary cost, root clearance is cheaper in the long run.

Apart

Section II. (Contd.)

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The filling in, canalisation and brick work in connection with the springs which throughout the area are much the same size costs approximately £75.

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All bush should be cleared on principle from the area of the town and for a belt of 250 yards around the town edge. In compounds and private ground this may be done by private enterprise, checked up by the Inspector in his weekly inspection.

Although expensive in primary cost, root clearance is cheaper in the long run.

Apart

Section III. (Contd.)

Apart from the smaller trees and the undergrowth the larger trees should be left. This especially applies along the canalised streams; if no such trees occur at points, quickly growing shade trees should be planted to shield the stream. I advise some tree unpopular to the mosquito such as the Jambosa; on this point the Forestry Department can give valuable advice.

Bush hides filth, masks collections of water and uses up valuable ground. But shade trees along watercourses discourage the malarial vector.

Root clearance costs 1d per square yard.

4. Open Air Baths.

The Yoruba native although dirty in their persons by European standards, indulge in baths to a considerable extent. Many a house has a small bamboo-enclosed space where the members of the family retire with a petrol tin of water and some coarse soap. Washing consists in squatting over the tin and splashing the water over the person; the sullage remains on the ground. This water nuisance will take some time to eradicate but by means of public baths I think the people can be educated out of it to a large extent.

Open air baths depend on a water supply.

In all cases must the bath be twin, one for each sex and provision must be made for washing before entering the bath. A personal attendant should be present at all times to insist on washing before going into the water.

I have allowed for a size of 50' x 40' x 2½' for each bath. Down one side of it should be a sufficient number of cubicles for dressing and washing. The floors of concrete should slope away from the bath for drainage and sluicing purposes. Persons should bring their own basins for washing but draw their water from the tap on the premises. Sullage water should be thrown into gutters draining into the main drain.

I

Section III. (Contd.)

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Rock clearance costs 1d per square yard.

4. Open Air Baths.

The Yoruba native although dirty in their persons by European standards, indulge in baths to a considerable extent. Many a house has a small bamboo-enclosed space where the members of the family retire with a petrol tin of water and some coarse soap. Washing consists in squatting over the tin and splashing the water over the person; the sullage remains on the ground. This water nuisance will take some time to eradicate but by means of public baths I think the people can be educated out of it to a large extent.

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Section III. (Contd.)

I have kept the depth of the bath shallow to prevent accidents.

I have gone into the question of water supply for these baths in all the six towns. In none of them is it practicable to have a constant inflow of fresh water. The only method possible is to use the water over and over again and to replace by fresh water only the slight waste through evaporation, and the weekly clean out.

This is possible with a quick filter and chlorinating plant. The cost of such a plant required to deal with the 63 thousand gallons of the twin baths in the twenty four hours is:

Cost of Filter	£1131
Chlorination	270
	£1401
Cost of bath construction	£1890
Total	£3291 for a twin bath

Such a plant will use three to four cylinders of chlorine in twelve months. The cost of such a cylinder in Lagos is £8.

5. Laundry Benches.

The aim throughout this report is to do away with the water nuisance and so discourage the breeding of mosquitoes.

Needless to say household washing occupies a large place in the duties of the African housewife. At present it is done anywhere in the compound and the used water is thrown out on the ground.

In the same way that she will be educated into bathing in the public baths, so she will become accustomed to use the laundry benches. The same remarks apply to these as to the water points: they must be numerous, and throughout the town area, so that there may always be one within easy reach of every house. This is "sine qua non" as no woman is going to carry a load of washing any distance when she can cleanse it at her own door.

Fig.VII

Section III. (Contd.)

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This is possible with a quick filter and chlorinating plant. The cost of such a plant required to deal with the 67 thousand gallons of the twin baths in the twenty hours is:

Cost of Filter	£1171
Chlorination	270
Cost of bath construction	£1890
Total	£3291 for a twin bath

Such a plant will use three to four cylinders of chlorine in twelve months. The cost of such a cylinder in Lagos is £8.

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Fig.VIII

Section III. (Contd.)

Fig.VIII shows the type of bench and Appendix IV gives the dimensions. Instead of running water as shown in the photograph, anti-waste taps will be used. One bench accommodating six persons, to every ten compounds has formed the basis of the numbers required.

The cost is as follows per single basin:

Masonry etc.	£3. 0. 0.
Taps, plumbing etc.	1. 0. 0.
Total	£4. 0. 0.

Cost of a six basin unit £24. 0. 0.

The concrete foundation slab should slope to a drain which leads all sullage water into a soakpit.

6. Conservancy.

The three methods of choice are:-

1. The pit latrine
2. The bucket system
3. The water carriage system.

The last is the ideal but it is expensive. It has its drawbacks in that the flushing mechanism is easily deranged and the tap easily blocked up by garbage which is liable to be thrown into it.

When it is used, the best system is to have public latrines each under the constant care of an attendant. The latrine is divided into two portions one for women and one for men: because of the large surplus of women in the Yoruba population, six holes are provided in their section and four in that of the men.

The chokage nuisance can be prevented by fitting to each hole automatic shutters which open when pressure is placed on the foot blocks and close immediately this is taken away.

There is a common trough to the latrine which is flushed out automatically at short intervals. If long intervals are used, a more than proportionately larger flush of water is required

Section III. (Contd.)

Fig.VIII shows the type of bench and Appendix IV gives the dimensions. Instead of running water as shown in the photograph, anti-waste taps will be used. One bench accommodating six persons, to every ten composing has formed the basis of the numbers required.

The cost is as follows per single basin:

Masonry etc.	£2.	0.	0.
Taps, plumbing etc.	1.	0.	0.
Total	£4.	0.	0.

Cost of a six basin unit £24. 0. 0.

The concrete foundation slab should slope to a drain which leads all sullage water into a soakpit.

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The three methods of choice are:-

1. The pit latrine
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The choking nuisance can be prevented by fitting to each hole automatic shutters, which open when pressure is placed on the foot blocks and close immediately this is taken away.

There is a common trough to the latrine which is flushed out automatically at short intervals. If long intervals are used, a more than proportionately larger flush of water is required

Section III. (Contd.)

required to move the accumulated excreta. The flush can be shut off from 7 p.m to 7 a.m. It is sufficient to calculate one hole for every fifty persons, taking a liberal maximum population.

This system postulates an adequate water supply.

A modern sewage farm is required. It us out of my province to recommend what the type should be, but continuous flow settlement tanks, rotating filters and humus tanks are as near foolproof as may be, and except for the filter arms, require no special machinery from England.

> "It is possible, though by no means, easy, to run a pail system for a native population in the tropics on sound sanitary lines, but even when receptacles, seats, means of transport and method of disposal are all as good as can be, the results will be unsatisfactory unless there is efficient inspection and control."
>
> Sir Andrew Balfour; Report on Medical and Sanitary Matters in Mauritius. London. 1922.

The pail system has been given a trial in the public latrines of Abeokuta but were it possible to dig pits in that town, it would not have been adopted. As explained elsewhere it is a "pis aller".

It has also been used at Ife in the public latrine in the King's Market but it proved so filthy and unsatisfactory that it has since been changed to the pit system.

In Oshogbo the population is of clean habits compared to that of Ife. Of these the police can be expected to be on a higher plain still. In spite of this the pail latrine installed in the police barracks there has been a failure, although there was a military system of supervision, and also a European Sanitary Inspector stationed in the town took a personal interest in the place. The pails are being replaced by a pit.

The three very serious drawbacks of the pit latrine are that it contaminates the subsoil water, that it breeds flies and becomes a nuisance. Throughout this report recommendations have been made with the view to superseding

the

Section III. (Contd.)

the

Section III. (Contd.)

the use of the subsoil water by a proper clean supply. In such an event, it matters nothing what its contamination may be.

The objection that the pit latrine breeds flies may be overcome by proper construction and by a self-closing lid over the hole.

When a compound is inspected weekly there is no difficulty in enforcing cleanliness of the latrine. I recommend that there should be a monthly service of tarring the floors and the lower foot of the walls of all these structures.

With these precautions pit latrines are clean and practicable. The measures already introduced into the area concerned have made the people accustomed to the idea. The private pit latrine costs nothing to the Government beyond the monthly tarring.

For public pit latrines a large pit thirty by ten feet is dug and covered with palm tree trunks. Over these mud is stamped down with a final shell of concrete. This slopes away to drains on all sides which deliver into a soakpit. The ten holes, in two compartments four for men, six for women, have slightly raised rims of concrete and the foot blocks on either side, operate automatic sliding doors over the hole. A mud wall faced with cement is built around the concrete floor and the roof is of thatch. Outside one end wall is an Otway fly trap.

This type can be combined with an incinerator thus saving the cost of labour of one man.

European quarters should all have a septic tank and water flush. Where private owners prove recalcitrant in installing these, government should do so and recover costs. The price varies from £60 to £100 according to the details.

7. REFUSE DISPOSAL.

Throughout this report I have based my recommendations for refuse disposal on a type of incinerator which I have termed

Section XIX. (Contd.).

Section III. (Contd.)

termed the £9 incinerator. This is an outside figure of its cost. The plan and dimensions are given in Appendix II. It is a permanent structure, of concrete and corrugated iron, is easily built and works satisfactorily.

One man can look after three at the same time, so where possible a unit should be composed of three of these built together. This reduces the price but to allow for contingencies I have retained the figure of £9 per incinerator.

The method of collection of the refuse depends entirely on whether there are roads throughout the town area or not. If not single incinerators are scattered about the town at convenient intervals, compound holders bring their rubbish to the incinerators themselves where it is burnt by the men in charge. Under these conditions, one man can only attend to two incinerators. As with water points and laundry benches, the incinerators must be within easy reach of all houses as otherwise the more distant householders will not be bothered to bring in their garbage. From this it will be appreciated that there is the danger that none of the incinerators will be working to capacity all the time.

It is therefore more economical to group the incinerators at some convenenient point, and transport the refuse to it from collecting stations all over the town. This can only be done where there are roads so that motor trucks can collect it from these stations. These stations are drying sheds made of a two feet mud wall faced with cement, covered by a corrugated iron roof on light angle iron uprights.

As a basis for estimation I have used one incinerator per 3000 of population. In small villages and towns this would not be enough, but in populations of 30000 and over, with a motor collection it is ample.

One motor truck and two trailers are enough to feed a dozen incinerators.

A

Section III. (Contd.)

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As a basis for estimation I have used one incinerator per 3000 of population. In small villages and towns this would not be enough, but in populations of 30000 and over, with a motor collection it is ample.

One motor truck and two trailers are enough to feed a dozen incinerators.

A

Section III. (Contd.)

A light motor truck with moveable sides drawing two light trailers, would make the journey from the central station, leave a trailer at a dump, fill up at another dump, pick up the already filled trailers from their dumps and return to the incinerators. This process is repeated until all the dumps have been cleared.

The truck and each trailer requires two scavengers.

In Appendix V I give the plans, prices and particulars of two types of these trucks and trailers. The Ford make is cheaper in capital cost but dearer in depreciation and running costs whereas the Morris is higher in initial price but of longer life and less cost to operate. In the estimates I have used the Morris prices as being the more expensive. Incidentally orders placed with the Morris people would coincide with the Government policy of encouraging the use of British-made cars.

8. Slaughter House.

The following recommendations are the combination of the good points of the various slaughter places now in use in the six towns. (Appendix VI.)

The slaughtering takes place in one of two rooms in a shed with wide entrances, and with window spaces high up in the walls. This shed opens on to a large concrete slab surrounded by a 6 ft. corrugated iron fence.
At the opposite end of the slab to the slaughter shed is a wide hinged gate near to which is a small shed for shelter of the labourer in charge of the place, for the storage of any material that may be necessary.

The floors of the slaughter rooms and the concrete slab are sloped down from their centres to their edges around which are continuous gutters which deliver via a common drain to a soakpit. Water is laid on in the slaughter rooms and to the slab.

Outside the gate is a £9 incinerator.

Plenty of ground should be kept vacant in the immediate

vicinity

Section III. (Contd.)

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At the opposite end of the slab to the slaughter shed is a wide hinged gate near to which is a small shed for shelter of the labourer in charge of the place, for the storage of any material that may be necessary.

The floors of the slaughter rooms and the concrete slab are sloped down from their centres to their edges around which are continuous gutters which deliver via a common drain to a soakpit. Water is laid on in the slaughter rooms and to the slab.

Outside the gate is a 2? incinerator.

Plenty of ground should be kept vacant in the immediate vicinity

vicinity for burying the non-combustible parts of the carcases and the offal: also for the construction of fresh soakpit as that in use becomes filled up.

When a river is available alongside the site a light pier is built out over the water way. The drain is carried along it and discharges over midstream. Offal etc., is carried along in barrows and emptied into the stream by a tip on the end of the pier.

The cost of the slaughter place complete is £800. A further £200 is required for the pier.

9. Meat Markets.

I recommend the following as a standard pattern in two sizes, one 100ft x 40ft, the other 50ft x 40ft.
They are both composed of a concrete floor filled in with rubble underneath, three foot off the ground. The concrete side walls are carried up to three foot above the floor all the way round leaving two fifteen foot entrances at the two narrow ends. The roof is supported on uprights and framework of angle iron and is composed of a permanent metal roof. The eaves do not overhang the walls by more than three inches in order to allow full ventilation.

Two rows of twenty five heavy wooden tables five feet by ten feet and two feet six inches high run down the length of the floor, with a 12ft way between them. This allows ample circulating space round all the tables.

Drainage is by two gutters running the length of the floor, one under each row of tables and protected by grids in the spaces between the tables. The floor slopes gently to one or other of these gutters. They drain outside into a soakpit. Water is laid on for cleansing purposes.

Mosquito screening of the market is not practicable. Over each table should be two covers, each covering a half of the table. These stout covers should have sides and top of gauze and should be attached by a light chain each to a counterbalance weight through a pulley on the roof frame,

Section III. (Contd.)

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9. Meat Markets.

I recommend the following as a standard pattern in two sizes, one 100ft x 40ft, the other 70ft x 40ft.

They are both composed of a concrete floor filled in with rubble underneath, three feet off the ground. The concrete side walls are carried up to three feet above the floor all the way round leaving two fifteen foot entrances at the two narrow ends. The roof is supported on uprights and framework of angle iron and is composed of a permanent metal roof. The eaves do not overhang the walls by more than three inches in order to allow full ventilation.

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Section III. (Contd.)

so that the cover can be moved up and down in similar fashion to an electric light pendant over a writing desk.

The cost of the larger market is £1,200, that of the smaller £700.

The sale of meat outside such a market should be prohibited.

10. General Markets.

Plans have been submitted by the Medical Officer of Health of Abeokuta in conjunction with the P.W.D. for the provision of a permanent pattern built of heavy angle iron and permanent corrugated iron on a concrete base. One shed consists of two rows of six bays. Each bay is a room enclosed on three sides and open on the fourth. The cost of such a shed is £70 and £10 for erection making a total of £80.

I have adopted this shed as the standard unit for general markets.

11. School Treatment Centres.

The centre in Lagos is used as a model. It consists of three rooms, a consulting room, a dispensary, a treatment room with files, records, etc., and a large open verandah like waiting room.

Water is laid on in the dispensary, consulting room and treatment room.

In concrete such a building costs £240 per room, and equipment including office material, medical and surgical requirements £150.

12. Propaganda and Health Teaching.

There would be no difficulty in arranging with all schools for weekly lessons to be given in hygiene; there are several little manuals already prepared to meet the demand. If the C .M.S. has not got one in the Yoruba language, it should be approached with a view to publishing a translation of one of them in this language on the guarantee that it should be used in government schools, as they are opened, or perhaps

government

Section III. (Contd.)

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government might prepare one itself.

I do not think that it is worth while having a cinema installation and propaganda health films for each area under consideration. In my opinion it would be practical for the office of the D.M.& S.S. to acquire a couple of combined electrical generators and projectors which are portable and can be driven by a belt from the jacked up rear wheel of any motor car. With the help of the International League of Red Cross Societies (Ave.Velasquez, parc Monceau, Paris) a suitable library of films covering all the field of health propaganda, might be got together. It is essential that such films should put forward their ideas in the most elementary manner, and that the actors in them should be non-Europeans. It is on these points that the above League can give invaluable advice.

The Sanitary Office could then loan out films and a projector on a definite program to M.O.Hs. throughout the country. My own experience has proved that open air shows up against any white wall, interpreted by an intelligent African inspector to the crowd, get through to the intelligence of the dullest native present.

13. Dispensaries.

A concrete room costs £240. On this basis the various dispensaries may be built up. The simplest building where nothing but work of the general out-patient character is carried on requires but three of these rooms, one consulting room and office, one combined pharmacy and treatment room, and a large open waiting room.

In various cases where more than one work is carried out in the same building such as school work, infant welfare and so on, extra rooms may be incorporated on the basis of the above cost which includes plumbing and water.

When two stories are built the cost becomes somewhat less but in spite of this I have estimated on the £240 figure.

Section III. (Contd.)

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Section III. (Contd.)

14. Maternity and Child Welfare.

The recommendations in this report are based on the para. "Training of Midwives" in the government publication "Training of Subordinate Staff of the Medical Department". Lagos:1930. To this general scheme has been added a further recommendation as to Health Visitors not covered in the above pamphlet.

The people object to leaving their own district: the inter tribal feeling is sometimes considerable. In consequence the teaching unit should be as local as possible. Already there is a school working smoothly in Abeokuta. A similar one is required in Ibadan and could run in conjunction with the Native Administration Hospital in that town. For the time being this school could deal with the whole of Oyo Province. Later when entrants for the course become numerous enough, a further school should be opened in Oshogbo in connection with the government hospital there. Oshogbo is within easy reach of Ede, Ife and Ilesha.

The aim will be to train girls of the locality in which they will eventually work.

The actual training could very well be modelled in its details on that at present carried out in Abeokuta. Each station would be in charge of a senior nursing sister in possession of the C.M.B.Certificate and the Health Worker's Certificate.

An excellent clinic has been started by the Wesleyan Mission Hospital in Ilesha. The difficulty lies in the instance of these mission bodies in choosing their own staff and pupils and retainig them under their control once trained. Although not used as a training centre, I do not recommend that maternity and child welfare work should be duplicated in Ilesha but that it should be left entirely in the hands of this hospital. The government would give a fixed yearly subsidy in return for inspection and for right of access to the record This of course is the procedure followed by the Minister of

Health

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Health

Section III (Contd)

Health in England in regard to the many private bodies which are doing health work.

The cost of a Standard teaching centre is:-

	£
Out-patient and lecture room	1,500
Ward and Labour Ward	1,500
Pupil Midwives Hostel	1,000
Kitchen, Laundry etc.	600
Water Supply, Drainage, etc.	1,000
Equipment	400
	£6,000

7See Memo from the Director of Medical & Sanitary Service to the Chief Secretary to the Government, File No.1205/DMS of the Medical Department 7

15. Infectious Diseases Hospital.

Circular No.8/DMS/1930 of the D.M. & S.S. gives details and costs of country types of hospitals. I have based my recommendations on the concrete built A unit of 36 beds.

Two large ward pavilions are not required but rather two four-bed observation wards, one male and one female, and twenty concrete floors of measurement 20ft x 20ft. In non-epidemic times the two permanent wards will be sufficient to cope with any infectious diseases. In epidemics temporary wooden uprights and thatch roofs will be erected over the permanent floors, two beds placed in each hut and patients put in. After the discharge or deaths of a hut's occupants, the temporary part is burnt down, and a fresh superstructure built.

No theatre or out-patients block is required.

Subtracting the cost of theatre, and out-patients block and substituting raised concrete floors, for ward pavilions, the cost comes to £4,400.

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Section III. (Contd.)

In Appendix VII I give particulars of Morris Motor Ambulances contained in a letter written by the Agent of this firm to the Director of Medical & Sanitary Service dated 30th June, 1930. The Fever Ambulance of standard type construction costs £460.

Upkeep is at £60 per month with the Driver's wage of £4 per month not included. (memo 11 item D of File 1205/DMS)

One hospital alone will be sufficient to deal with the Ọyọ area and I have recommended that it should be placed at Oshogbo, with one fever motor ambulance attached to it, and another one posted at Ifẹ, to serve it from the out stations.

16. Sanitary Staff and Duties.

In all cases in the towns reported on, there is enough work to demand a Medical Officer of Health and a European Sanitary Inspector (grade I). I have also recommended appointment of European Sanitary Inspectors (grade II) whose duties will be solely concerned with the prevention of mosquito breeding. This is in my opinion an important post as by this means I expect a considerable fall in the incidence of malaria, filariasis, and Yellow Fever.

All fresh appointments to native sanitary inspector posts will be made from men who have passed the examination at the end of the course at the Sanitary Inspectors' School at Ibadan. In the choice of these men it would be advisable, that the local chiefs of the various towns should choose their own candidates for the course with the view to subsequent appointment to the particular chief's area. Naturally the candidate must comply with the conditions laid down for admission to the course. His duties will be to examine the houses and compound for all water untidiness and mosquito breeding which he must report, the cleanliness of compounds and salgas, whether laundry or any water-using trade is being carried on and to suppress recrudesence of bush.

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In each of the sanitary areas in a town there should be a sanitary gang of a headman and ten labourers directly under the Chief Sanitary Inspector whose duties it would be to keep salgas clean and pitched, do any necessary work in compounds such as filling borrow pits, also bush clearing in the area, attention to waste lands and the cleaning of public establishments such as markets, laundry benches etc., in their area.

The European mosquito Inspector should have a similar gang purely for his work which would consist of keeping all stream-canals and contour drains free and in good repair, oiling of these once a week, filling in of water carrying depressions in the stream and present swamp areas which may form or be made surreptitiously, such as borrow pits, a set programme of larva dipping in control trap pools, and surprise visits into the houses to check up this work of the area inspectors. Any default in the latter would be reported to the M.O.H. who would deal with it through the Chief Sanitary Inspector.

17. Compound Inspection.

The whole of the scheme set forward in this report hinges on sanitary inspection of compounds. In the past there has been a certain amount of friction caused by it, but by now, with the support of the local chiefs this has become very inconsiderable.

The moral support of these magnates must be continuously sought as public opinion is moulded entirely by their attitude. At present they are more or less helpful. In Ife, conditions may change for the better with the accession of a new Oni.

Sufficient Sanitary Inspectors have been planned for each town, that every compound may be thoroughly inspected. There will be no excuse for slipshod work. Each man will work to a time table so that all compound heads will know

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Section III. (Contd.)

that at a particular time on a particular day of each week, the inspector will be there. Compound heads who persist in leaving their properties empty at the time of the inspector's visit could be dealt with through the local chief. If as is often the case, the head must absent himself on his farm and take his family with him, he should be made to have some reasonable person at his compound at the time appointed by the inspector.

Section IV. Ire.

1. Water Supply.

There is a supply being built at present but the plans only allow for about ten points from which the public may draw water. I do not think this is enough and will defeat the ends of the scheme which is to supply not only drinking water but washing water to the community. It is human nature to save oneself trouble. Although I am assured that the public will draw their drinking water from the water points, they are almost certain to keep their wells open for drawing water for other purposes rather than carry heavy pitchers of water over considerable distances. Even were they to do this, the tendency will be to reduce these journeys to the minimum and to board water on the premises; the present water nuisance will thus remain.

I recommend a considerable increase in the water points so that no one will have the excuse of distance to prevent them getting water for all purposes, and as often as necessary, from the point. Otherwise the question of well pollution will arise from the sedges which this scheme does not allow for.

The extra works entailed by the proposal of the enlargement of the plans as they stand at present would cost a further £15,000.

2. Canalisation of Streams.

The red continuous lines in the plan show roughly the length of stream which require canalisation. They measure more than four miles and less than five. It is impossible to be more accurate at present as I do not know the courses of the streams north of ouvertes in squares L:8 and M:11. The length to be treated at those points will be those parts within half a mile of the nearest houses in the European Quarter.

The

Section IV. (Contd.)

The same remark applies to the stream running through the swamp around the base of Government Hill, also to that flanking the town to the south and south east.

Cost: £50,000.

Contour drains. These are required along the edges of all the present swamps and are indicated on the plan by broken red lines. For the same reason as before it is impossible to give more than approximate estimates of the length required; it lies between seven and ten miles. Earth drains are all that are required.

Cost : £440.

Pond Filling. Those to be filled are in squares L:10, L:11, L:12, I:12, I:13, M:13, M:17, K:18, K:19, J:21, and J;22.

Cost : £735.

Springs. Two springs forming ponds in square H:14 will require bricking in and canalisation.

Cost : £150.

3. Bush Clearing.

All undergrowth should be cleared out from the whole of the town area but in squares H:15, 16, and 17 the Oni should be consulted again. From what he has already told me there should be no difficulty but as a measure of safety this procedure is advisable. This removal of undergrowth should be continued for two hundred yards along the edges of the town and within a quarter of a mile of the European Quarter and of the house of the District Officer. Cost : £2000.

4. Open Air Baths.

By the end of this year there is to be a pure water supply delivered to the King's Market, which is the centre of the town. An open air bath should be installed as near to this point as possible. Two sites offer themselves for this purpose, one in the vicinity of square H:16, the other in that of square K:17. Both of these are at present swamp areas during the rains but if the drainage recommendations made above are adopted, they will be dry ground, also they

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Section IV. (Contd.)

will be unoccupied.

These sites allow for proper drainage of the bath as required.

Cost : £3291.

5. Laundry benches.

One bench is required to every 10 compounds, that is 10 benches to the town. They should be evenly distributed through the town according to the population density.

Cost : £240.

6. Conservancy

The projected water supply of six gallons per head is not enough to allow for a satisfactory water carriage system, especially from the point of view of treatment of the resulting sewage which would be very strong.

For these reasons I do not consider that any good could be done with this system in Ife.

For Ife the bucket system is also not practical.

There remains the pit latrine. These exist already to a certain extent and are increasing; the people are used to the idea. The great argument against the pit is the tendency to the pollution of the subsoil water and the poisoning of well water.

At the end of the year there is to be a water system in the town. As will be seen under that heading, I recommend that when this happens, private wells be closed down. There is already great enthusiasm in the town about the new pure drinking water, and apart from water for laundry, well water will not be used after that by the great majority. I am also recommending proper laundry places, so that this reason for keeping open the wells vanishes.

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Section IV. (Contd.)

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Section IV. - Ife (Contd.)

When the water arrives, the wells should be all closed down. This removes the biggest objection to the pit latrine. In connection with this closing, where the depth of the well allows, these may be filled in to a depth of ten feet above the wet season subsoil water level and when leaving an open depth of ten feet or more, may be used as the pit for a latrine.

I propose a sufficient sanitary staff for the town one of whose duties will be a weekly inspection of every pit latrine. This will deal with the fouling of the surrounding which seems inevitable in this district whatever the system used may be.

For the European Quarter and the house of the District Officer, septic tank systems will be required.

Cost of one septic tank installation for District Officer's house : £130.

For the other projected houses I have combined this cost in the total.

7. Refuse Disposal.

The best system for Ife is a central battery of incinertors served by motor trucks and trailers in conjunction with collecting dumps. The compound owner should be responsible for removing all refuse to the xxxxxdump one of which is necessary for every ten compounds. The dump should be covered with corrugated iron roof to prevent the refuse becoming unduly wet during the rainy season. Additional dumps are required for each market and for the Afin. The European Quarter and the District Officer's House should have bins with covers.

The incinerator battery should be situated in the bush in the vicinity of square D:7, so as to be well away from human habitation, down wind to the prevailing winds,

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winds, and protected by a screen of bush from the Ibadan-Ilesha bye-pass road. This screen will abate any fly nuisance reaching the town; although this should not arise, this measure makes safety doubly sure.

The battery will consist of four triple £9 incinerator units.

	£
Cost Incinerators	108
Morris Truck	265
Two trailers	150
10 Drying sheds	50
Tools	20
Total	£593

8. Slaughter house.

The largest meat market is in square G:18. I recommend the extension of the present slaughter slab in H:17 to be extended into a standard slaughter place.

Cost :£800.

9. Meat markets.

Three markets are required, a large one in Iremo market (square J:13) and two small ones, one at Ilode (square H:20) and the other at Modakeke (square Q:9)

Cost : 1 large market	£1200
2 small markets	£1400
Total	£2600

10. Markets.

Market sheds are required as follows :-

Iremo	square J:14	4 sheds
King's Market	square G:18	4 sheds
Modakeke	Q:10	2 sheds.

Costs : 10 sheds at £80 £800.

11. Schools.

When the development of Lagos is remembered during the present century, one is justified in taking the long view in connection with Ife should the funds for a like growth become available. In the present state school inspection would form part of the work of the Medical Officer to whom reference is made further on in this report. He requires assistance of a trained female nurse who

Section IV - Life (Contd.)

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2 small markets	£1600
Total	£2800

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King's Market square G:18 4 sheds

Modakeke G:10 2 sheds.

Costs : 10 sheds at £80 £800.

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SECTION IV. - IFE. (CONTD.)

who advisably should have undergone a further period of training directly under the School Medical Officer of Lagos. Treatments would be carried out at special times set aside for school children at the Central Dispensary (see below).

The District Officer tells me that the native population are very much in favour of education and should free government schools be set up, many children would be sent by their parents. The provision of schools is of course outside the sphere of this Department but it is necessary to allow for steps taken by the Education authority in the future in such a promising field.

Lagos has a school population of 12% of its total. There is however a high death rate below puberty in Ife so that this is probably too high; 7.5% would appear a conservative estimate as according to the District Officer the mortality is most marked before the age of six; school age is from seven to fourteen. The potential school population is therefore about 2600.

To look after the sick from these a school Medical Officer will be required. He would be helped by two African assistants, both nurses, and both trained at the School Centre, Lagos, one male and the other female. They should both be capable of doing the necessary clerical and office work.

The work would be carried on at the Central Dispensary. Cost of school clinic equipment : £150.

13. Dispensaries.

To start with, one is required in a central spot such as K:16. It should be in charge of a Medical Officer assisted by a male nurse, a dispenser to act also as clerk and a female nurse who has been trained under the

SECTION IV. - IFE. (CONTD.)

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To start with, one is required in a central spot such as K:16. It should be in charge of a Medical Officer assisted by a male nurse, a dispenser to act also as clerk and a female nurse who has been trained under the

school Medical Officer at Lagos.

The duties of the dispensary would be those of an outpatients' department of a hospital and there would be a daily attendance each morning.

The rest of the Medical Officer's day would be spent in school inspection which would at present occupy two half-days a week, vaccination and venereal work.

The dispensary would act as a centre from which cases which require in the Medical Officer's opinion, hospital treatment, can be cleared to Oshogbo by ambulance.

The general design of the building would be a large central waiting room with pharmacy and clerk's desk, a treatment room, and two consulting rooms, one for the general, the other for school work.

It will be a considerable time before extra accommodation or staff will be required but when this becomes necessary the lines of development would lie along subsidiary dispensaries in the southeast district, in Ilare and in Modakeke, and a separation of the school work under a whole time staff of Medical Officer, male and female nurses and clerk-dispenser.

Cost : Central Dispensary	£1000
Ilare	750
Modakeke	750
	£2500

14. Maternity & Child Welfare. Death begins to thin out the ranks at the second month by means of the diarrhoeas and dysenteries. Other prevalent diseases during the first six years are tetanus, convulsions, which may mean anything Malaria and Ascariasis are almost universal in the child populatic on, and "white tongue". I did not see any cases of the latter but according to the clergyman it is common. The tongue becomes covered with a white layer which can be scraped off; if this is done at this stage the child recovers, otherwise the layer extends to the throat, the whole goes black, the teeth loosen, there is swelling of the extremities and then death. I suggest this may be pellagra.

school Medical Officer at Lagos.

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Cost : Central Dispensary £1000
Ilare 750
Modakeke 750
£2500

14. Maternity & Child Welfare. Death begins to thin out the ranks at the second month by means of the diarrhoeas and dysenteries. Other prevalent diseases during the first six years are tetanus, convulsions, which may mean anything Malaria and Ascariasis are almost universal in the child population, and "white tongue". I did not see any cases of the latter but according to the clergyman it is common. The tongue becomes covered with a white layer which can be scraped off; if this is done at this stage the child recovers, otherwise the layer extends to the throat, the whole goes black, the teeth loosen, there is swelling of the extremities and then death. I suggest this may be pellagra.

Section IV. (Contd.)

I have also seen a considerable amount of the after-effects of infantile paralysis chiefly of talipes varus and valgus types associated with muscular wasting.

Other serious diseases of this age shared in common with latter life are pneumonia, smallpox and chickenpox.

From the above information it is difficult to separate the infantile mortality from that of the toddler age, but as few children die after that, the reduction of the family by more than fifty per cent occurs in the first six years of life; truly a horrible state of affairs.

The centre would be near the King's Market and would be in charge of a Senior Nursing Sister with C.M.B. and Health Visitor qualifications assisted by 3 midwives and three health visitors trained at the provincial school of Ibadan. The cost would be:

Outpatients room	£1500
Ward & Labour Ward,	1500
Kitchen, Laundry, etc.,	600
Water Supply, Drainage, etc.,	1000
Equipment,	400
Total	£5000

15. Infectious Disease Hospital.

I recommend one hospital for the area comprised by Ede, Ife, Ilesha and Oshogbo. As there is a general hospital at Oshogbo, I consider this to be the most suitable site for this Infectious Disease Hospital and consider it under the report on that town.

A two-berth motor ambulance should be stationed at the general hospital and another at the infectious hospital to deal with the above area. Another one should be stationed at the opposite corner of the quadrilateral, Ife, and be available for both sorts of work as a relief for the other two. Means of proper disinfection of the car should be installed at the Ife garage, and also in that of the Infectious Disease Hospital ambulance at Oshogbo.

Cost: Morris Motor Ambulance £460.

Section IV. (Contd.)

I have also seen a considerable amount of the after-effects of infantile paralysis chiefly of talipes varus and valgus type associated with muscular wasting.

Other serious diseases of this age shared in common with latter life are pneumonia, smallpox and chickenpox.

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Kitchen, laundry, etc.,	600
Water Supply, Drainage, etc.,	1000
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I recommend one hospital for the area comprised by Ede, Ife, Ilesha and Oshogbo. As there is a general hospital at Oshogbo, I consider this to be the most suitable site for this Infectious Disease Hospital and consider it under the report on that town.

A two-berth motor ambulance should be stationed at the general hospital and another at the infectious hospital to deal with the above area. Another one should be stationed at the opposite corner of the quadrilateral, Ife, and be available for both sorts of work as a relief for the other two. Means of proper disinfection of the car should be installed at the Ife garage, and also in that of the Infectious Disease Hospital ambulance at Oshogbo.

Cost: Morris Motor Ambulance £460.

Section IV. (Contd.)

16. Sanitary Staff and Duties.

The sanitary authority should be the Medical Officer of Health and a European Sanitary Inspector (Grade 1) having the certificate of the Sanitary Institute of London, and a European Sanitary Inspector (grade 2) in whose charge would be all anti-mosquito work, under the Medical Officer of Health.

The town is divided up into six wards for administrative purposes, and at present two wards form a sanitary area. I think these are too large and each ward should be in itself a sanitary area. There would then be on an average forty five compounds to each area of about 160 houses.

Responsible for the sanitary condition of each area would be an African Inspector trained at Ibadan.

The Staff would be:-

1 Medical Officer of Health
1 European Sanitary Inspector Grade 1
1 European Sanitary Inspector Grade 2
6 African Sanitary Inspectors
1 African Sanitary Inspector for meat, markets, and slaughter houses.
6 Gangs of 1 headman and 6 labourers per area
6 headmen
36 labourers
1 Mosquito gang
1 headman
10 labourers
2 Bath Attendants
2 Refuse Disposal Headmen
4 Incinerator men
1 Motor refuse truck driver
6 Labourers to collect refuse on the truck and trailers.
5 Drying shed men
1 Slaughter house master
3 Meat Market Masters
3 Market Masters
1 Motor Ambulance Driver.

Section IV. (Contd.)

16. Sanitary Staff and Duties.

The sanitary authority should be the Medical Officer of Health and a European Sanitary Inspector (Grade 1) having the certificate of the Sanitary Institute of London, and a European Sanitary Inspector (grade 2) in whose charge would be all anti-mosquito work, under the Medical Officer of Health.

The town is divided up into six wards for administrative purposes, and at present two wards form a sanitary area. I think these are too large and each ward should be in itself a sanitary area. There would then be on an average forty five compounds to each area of about 1500 houses.

Responsible for the sanitary condition of each area would be an African Inspector trained at Ibadan.

The Staff would be:-

1	Medical Officer of Health
1	European Sanitary Inspector Grade 1
1	European Sanitary Inspector Grade 2
6	African Sanitary Inspectors
1	African Sanitary Inspector for meat, markets, and slaughter houses.
6	Gangs of 1 headman and 6 labourers per area 6 headmen 36 labourers
1	Mosquito gang 1 headman 10 labourers
2	Relief Attendants
2	Refuse Disposal Headmen
4	Incinerator men
1	Motor refuse truck driver
6	Labourers to collect refuse on the truck and trailers.
5	Drying shed men
1	Slaughter house master
3	Meat Market Masters
3	Market Masters
1	Motor Ambulance Driver.

Section IV. Ilesha.

1. Water Supply.

If a pipe supply could be brought into the town, half the battle to eradicate the "water diseases" malaria, Yellow Fever, and Helminthiasis, would be won.

The draw back with most of the local streams, except those below the town, is that they dry up in the dry season. The only one of sufficient size not to do this, is the Ọshun stream, not to be confounded with the river a few miles to the north of the same name. This stream flows round the southern flank of Imọ hill and I am told never completely dries up. (Plan III).

At this point it is between the 12 and 13 hundred contour lines. The distance across the valley at the latter level being about a third of a mile.

The centre of Ilesha, the Afin, is a little over two miles distance; the town lies around the 12 hundred form line.

I suggest that the water supply be obtained from this stream by placing a dam across the narrowest point of the valley below Imọ hill, about 2 hundred yards above the present bush path. The settlement and quick filtration tanks, the chlorinating plant, and the pumps would be above about the spot occupied on the plan by the W of Imọ. This would allow of a gravity feed to the highest point of the town.

The valley of the stream is under primary jungle which would have to be cleared; the shaded area on the plan representing the reservoir is therefore only approximate.

Thanks to the spirits which haunt the top of Imọ hill, the district is sparsely inhabited, the only villages in the catchment area being Iloko and Iwaraja, three, and three and a half miles respectively, east of the proposed dam site. The drainage of the village of Imọ

would

Section IV. Ilesha.

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The draw back with most of the local streams, except those below the town, is that they dry up in the dry season. The only one of sufficient size not to do this, is the Osun stream, not to be confounded with the river a few miles to the north of the same name. This stream flows round the southern flank of Imo hill and I am told never completely dries up. (Plan III).

At this point it is between the 12 and 13 hundred contour lines. The distance across the valley at the latter level being about a third of a mile.

The centre of Ilesha, the Afin, is a little over two miles distance; the town lies around the 12 hundred form line.

I suggest that the water supply be obtained from this stream by placing a dam across the narrowest point of the valley below Imo hill, about 2 hundred yards above the present bush path. The settlement and quick filtration tanks, the chlorinating plant, and the pumps would be above about the spot occupied on the plan by the W of Imo. This would allow of a gravity feed to the highest point of the town.

The valley of the stream is under primary jungle which would have to be cleared; the shaded area on the plan representing the reservoir is therefore only approximate.

Thanks to the spirits which haunt the top of Imo hill, the district is sparsely inhabited, the only villages in the catchment area being Iloko and Iwaraja, three, and three and a half miles respectively, east of the proposed dam site. The drainage of the village of Imo would

Section IV. (Contd.)

would be into the stream below this point.

The valley would have to be properly surveyed.

A provisional estimate of the cost is £75,000.

2. Canalisation of Streams.

The length of canalisation is about five miles, and earth contour drains from eleven to thirteen miles. These are indicated by red continuous, and red dotted lines respectively on Plan II.

Cost of canalisation £50,000

Cost of earth drains £ 572

3. Bush Clearance.

There is a small area of bush which is connected with the religious observances of Ilesha in square E:10. Except for this, all bush in the town limits requires to be cleared including that between Igbogi and Okenyi. In addition all bush should be driven back from within two hundred yards of houses. This is particularly needful on the Ibadan road where the bush comes right up to the houses of Okenyi on the south side. This amounts to half a square mile of secondary bush and a fifth of a square mile of primary.

Borrow Pits. The present stringent campaign against these should be maintained. If this carried out no other measures will be required in their connection.

Cost £8,746.

4. Open Air Baths.

The site for the twin baths is in square F:10; needless to say, it is dependent on piped water being brought into the town.

Cost £3,291.

5. Laundry Benches.

These should be distributed as follows:- One in Okenyi, three in Igbogi, four in area B and four in area C would suffice.

Cost £264.

Section IV. (Contd.)

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The valley would have to be properly surveyed.

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One in Okenyi, three in Igbogi, four in area B and four in area C would suffice.

Cost £264.

Section IV. (Contd.)

6. Conservancy.

All the arguments used in discussing the situation in Ife apply here. Salgas are much more numerous and are kept in a surprisingly clean condition. Extension is taking place throughout the town. Only the more tardy need to be brought into line and a judicious word to the ward Chiefs is all that will be required to effect the desired result.

It must be remembered that there is no piped water supply to the town although this is highly desirable.

The same system of inspection will be put into force here as in Ife and the same periodical tarring will be required. In Ilesha because of the cleanliness of the people the former will not be so arduous as in Ife.

Cost of septic tank in Assistant District Officer's house £130.

7. Refuse Disposal.

The same scheme proposed for Ife would work well in Ilesha. Four covered collecting sheds at central points would be required in Igbogi, nine in area B, eleven in area C and three in Okenyi. The incinerator battery would be in square M;9 and would consist of six triple units with a covered dump. The one motor truck and two trailers would deal with the transport.

Cost	Incinerators	£162
	Morris Truck	265
	Two Trailers	150
	23 Drying Sheds	115
	Tools	20
	Total	£712

8. Slaughter House.

The present slaughter slab is on the proposed site of the Hausa Settlement and is therefore not suitable as a site for the slaughter house.

In

Section IV. (Contd.)

6. Conservancy.

All the arguments used in discussing the situation in Ife apply here. Salgas are much more numerous and are kept in a surprisingly clean condition. Extension is taking place throughout the town. Only the more tardy need to be brought into line and a judicious word to the ward Chiefs is all that will be required to effect the desired result.

It must be remembered that there is no piped water supply to the town although this is highly desirable.

The same system of inspection will be put into force here as in Ife and the same periodical burning will be required. In Ilesha because of the cleanliness of the people the former will not be so arduous as in Ife.

Cost of septic tank in Assistant District Officer's house £150.

7. Refuse Disposal.

The same scheme proposed for Ife would work well in Ilesha. Four covered collecting sheds at central points would be required in Igbogi, nine in area B, eleven in area C and three in Okeoyi. The incinerator battery would be in square M;9 and would consist of six triple units with a covered dump. The one motor truck and two trailers would deal with the transport.

Cost Incinerators	£162
Morris Truck	265
Two Trailers	150
25 Drying Sheds	115
Tools	20
Total	£712

8. Slaughter House.

The present slaughter slab is on the proposed site of the Houses Settlement and is therefore not suitable as a site for the slaughter house.

In

Section IV. (Contd.)

In Ilesha the butchers are accustomed to slaughter their meat outside the town and subsequently to bring it into the town.

A useful site is therefore in the immediate vicinity of the destructor in square M:9. - cost £800.

9. Meat Market.

One large market alone is required for the whole town, in the King's Market. There is at present a disused well in the south west corner which would prove admirable as a soakpit. The site for the market is therefore on the south side of the Akure-Benin road where the Ife-Ibadan road branches off to the south.

Cost £1,200.

10. Markets.

In the King's Market 5 sheds should be placed to the east of the meat market. Also elsewhere there would be required, in the seven wards, seven sheds one in each ward, to replace the miniature market which at present gathers round each large tree at the larger cross roads.

Cost 12 sheds £960.

11. Schools.
13. Dispensaries.
14. Maternity and Child Welfare.

The Wesleyan Hospital is so well established in the esteem of the people and is so well known that I think that all future medical work should be developed on it as a nucleus.

I recommend that Government should enter into negotiations with the Authorities of this body with a view to their carrying it out on grounds agreeable to both parties. The Mission funds and staff are at present entirely inadequate to attempt such an expansion.

The present system of outpatient clinics of various kinds

Section IV. (Contd.)

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I recommend that Government should enter into negotiations with the Authorities of this body with a view to their carrying it out on grounds agreeable to both parties. The Mission funds and staff are at present entirely inadequate to attempt such an expansion.

The present system of outpatient clinics of various kinds

kinds could be expanded to take in school children, venereal work and vaccinations. The Infant and maternal welfare work could be developed from the nucleus already started.

I think that were Government to make a permanent yearly grant as is done to the many private societies engaged in health work, at home by the Minister of Health, the Mission could be left to carry on the work along prearranged lines.

15. Sanitary Staff and Duties.

The Sanitary Authority will be the Medical Officer of Health assisted by a European Sanitary Inspector and a European Anti-malaria Inspector. (Class 2).

The town is divided politically into six wards which are classed as three sanitary areas each with an African Inspector. With the intensive inspection proposed this is too big an area for one man. There should be one to each ward and an extra one for Okenyi, making seven in all. These men should be Ibadan trained.

To each ward and to Okenyi there would be a sanitary gang of a headman and six labourers with duties as in Ife.

The gang under the Anti-malarial Inspector should remain at ten men as their work remains as great as that of the similar gang in Ife.

The staff would be:-

1 Medical Officer of Health.
1 European Sanitary Inspector Grade I.
1 European Sanitary Inspector Grade II.
7 African Sanitary Inspectors.
1 African Sanitary Inspectors for Meat Market and Slaughter House.
7 Gangs of 1 Headman and 6 labourers per area
7 headmen
42 labourers.
1 Mosquito gang
1 headman
10 Labourers
2 Bath Attendants.
2 Refuse Disposal Headmen
6 Incinerator men
1 Motor Refuse Truck Driver.
6 Labourers to collect on truck and trailers.
12 Drying shed labourers.
1 Slaughter House Master.
1 Meat Market Master.
1 Market Master.

Section IV. (Contd.)

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7 Headmen
42 Labourers.
1 Mosquito gang
1 Headman
10 Labourers
2 Bath Attendants.
2 Refuse Disposal Headmen
6 Incinerator men
1 Motor Refuse Truck Driver.
6 Labourers to collect on truck and trailers.
12 Drying shed labourers.
1 Slaughter House Master.
1 Meat Market Master.
1 Market Master.

Section IV - Oshogbo.

1. Water Supply.

The planned scheme should be built at the earliest opportunity.

Cost £63,500.

2. Canalisation of Streams.

As will be seen from the red lines of plan IV there are four miles required of canalisation and three miles of earth contour drains.

Cost: Canalisation £40,000

Earth Drains £ 132

3. Bush Clearance.

As will be seen from the plan there is quite enough bush in the immediate vicinity of the town to keep a busy gang of one headman and ten men. Their duties would not include the clearance of any minor patches in the sanitary areas themselves such as in the Owe Ope valley, which would come under the jurisdiction of the particular sanitary gang of the quarter.

To clear the 200 yard belt round the town will cost £6,200.

4. Public Baths.

The best site for the two tanks is close to the King's Market in the Ataka Quarter with drainage to the north east. This is very close to the main pipe line.

Cost £3,291.

5. Laundry Benches.

I recommend a bench in each Quarter. As pipe lines are projected to pass through all of these, a bench can be placed in close proximity to the pipe. In addition to these one will be required in the village to the north of the station in square P:6 where there is also to be a water point. This gives a total of 15 Benches.

Cost £360.

6. Conservancy.

As reported the situation is comparatively good; the present intensive campaign in salga building should

Section IV - Osbrogbe.

1. Water Supply.

The planned scheme should be built at the earliest opportunity.

Cost £63,500.

2. Canalisation of Streams.

As will be seen from the red lines of plan IV there are four miles required of canalisation and three miles of earth contour drains.

Cost: Canalisation £40,000
Earth Drains £ 192

3. Bush Clearance.

As will be seen from the plan there is quite enough bush in the immediate vicinity of the town to keep a gang of one headman and ten men. Their duties would not include the clearance of any minor patches in the sanitary areas themselves such as in the Owe Ope valley, which would come under the jurisdiction of the particular sanitary gang of the quarter.

To clear the 200 yard belt round the town will cost £6,200.

4. Public Baths.

The best site for the two tanks is close to the King's Market in the Alaka Quarter with drainage to the north east. This is very close to the main pipe line.

Cost £3,291.

5. Laundry Benches.

I recommend a bench in each Quarter. As pipe lines are projected to pass through all of these, a bench can be placed in close proximity to the pipe. In addition to these one will be required in the village to the north of the station in square F:6 where there is also to be a water point. This gives a total of 15 Benches.

Cost £760.

6. Conservancy. As reported the situation is comparatively good; the present intensive campaign in anga building should

Section IV. (Contd.)

should be continued. There will be no difficulty in this. Septic tank installation for four houses in the European Reservation, the Post Office, the old Post Office, the P.W.D.Office, the Medical Officer's house and those of the District Officer and the Assistant District Officer.

Cost £1,300.

7. Refuse Disposal.

This is the black spot in the town sanitation, not through lack of means, but through the laziness of the people to avail themselves of them. The situation is further complicated by the lack of roads in the town so that the motor trucks recommended for Ife and Ilesha are useless here. The solution of the problem lies in the multiplication of the £9 incinerator throughout the town and a strict weekly inspection of public paths and compounds.

The incinerators at present in use are situated as follows:-

At cross roads (M:7)	2
Hausa Market (D:14)	1
Hospital (L:10)	1
King's Market (N:19)	1
Balogun Quarter (K:14)	1
Ataka Quarter (O:17)	1
Government Hill, 2 miles out of town	1
Oleyo (J:19)	1

I recommend that more should be put up at the following central spots :-

Gbamu Quarter (L:17)
Abua Quarter (J:16)
Owe Ope Quarter (H:16)
Square F:14
Olugun (I:18)
Isale Kegbo Quarter (K:21)
Italorun Quarter (M:21)
Isale Oshun Quarter(N:22)
Jamegbo Quarter (O:20)
Oluode Quarter (L:12)
Station Village (P:6)

This would cover the town evenly and in no place would any house be at too great a distance for any excuse not to bring refuse to the incinerator drying shed. Each compound head should be made responsible for the cleanliness of the nearer half of any public path abutting on his compound.

Of

Section IV. (Contd.)

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Olunde Quarter (L:12)
Station Village (F:6)

This would cover the town evenly and in no place would any house be at too great a distance for any excuse not to bring refuse to the incinerator drying shed. Each compound head should be made responsible for the cleanliness of the nearer half of any public path abutting on his compound.

Of

Section IV. (Contd.)

Of course it will be said by a defaulting head that it is the next door neighbour who puts the refuse on his bit of path. But I have found under similar circumstances in Mexico that if this is not accepted as a reason, the compound heads soon settle it to their mutual advantage and the paths are kept clean.

Strict inspection coupled to the cutting down of bush thus leaving no surreptitious corners for refuse-dumping would answer the question of refuse disposal.

These twenty incinerators should be looked after by ten labourers under the supervision of two headmen.

The number of twenty incinerators is not unduly high when it is considered that were it possible to group them in a battery, fifteen would be required for Oshogbo.

Cost of 11 incinerators	£108
" 11 Drying Sheds	55
Tools	20
	£183

8. Slaughter House.

A suitable site is in square B:11.

Cost £800.

9. Meat Markets.

A market should be erected in the King's Market (H:19) but in the opposite side to the general market. A small one is required in the Hausa market (C:13).

Cost:	1 large market	£1200
	1 small market	700

10. Markets.

Six standard sheds should replace the present conglomeration of stalls on the south side of the road in the King's Market and a further three should be erected in the Hausa market.

2 sheds

Section IV. (Contd.)

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" 11 Drying Sheds 55

Tools 20

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Cost: 1 large market £1200

1 small market 700

10. Markets.

Six standard sheds should replace the present conglomeration of stalls on the south side of the road in the King's Market and a further three should be erected in the Hausa market.

2 sheds

Section IV. (Contd.)

2 sheds also are necessary in the Balogun area at the road junction in square G:13.

Cost: 11 sheds £880.

11. Schools.

School inspection should be carried out by a Medical Officer appointed for this purpose. A centre built in close proximity to the Hospital could be most satisfactory.

Cost (4 rooms)	£960
Equipment	150
Total	£1110

13. Dispensaries.

No dispensaries are required in the town as the Out-patient Department of the Hospital carries on this work.

14. Maternity and Child Welfare.

As already discussed in Section III paragraph 14 Oshogbo is a suitable centre for a school. The building should adjoin the Hospital so as to save Medical Officer's time and travelling when called in to difficult cases.

Cost £6,000.

15. Infectious Diseases Hospital.

This should serve the Oshogbo-Ede-Ife-Ilesha area. A suitable site is the small hill in the bush in the vicinity of square B:7.

An ambulance should be stationed at Oshogbo.

Cost:	I.D.H.	£4,400
	Ambulance	460
	Total	£4,860

16. Sanitary Staff and their duties.

Although the work is carried out at present as well as can be expected, the areas under supervision of the Inspectors are too large to allow for a proper examination of every compound once a week. I recommend that the area should be further divided up and an inspector placed in

charge

Section IV. (Contd.)

2 sheds also are necessary in the Saloqun area at the road junction in square G:15.

Cost: 11 sheds £880.

11. Schools.

School inspection should be carried out by a Medical Officer appointed for this purpose. A centre built in close proximity to the Hospital could be most satisfactory.

Cost (4 rooms) £960

Equipment 150

Total £1110

13. Dispensaries.

No dispensaries are required in the town as the Out-patient Department of the Hospital carries on this work.

14. Maternity and Child Welfare.

As already discussed in Section III paragraph 14 Oanogbo is a suitable centre for a school. The building should adjoin the Hospital so as to save Medical Officer's time and travelling when called in ~~to~~ difficult cases.

Cost £6,000.

15. Infectious Diseases Hospital.

This should serve the Oanogbo-Ede-Ife-Ilesha area. A suitable site is the small hill in the bush in the vicinity of square B:7.

An ambulance should be stationed at Oanogbo.

Cost: I.D.H. £4,400

Ambulance 460

Total £4,860

16. Sanitary Staff and their duties.

Although the work is carried out at present as well as can be expected, the areas under supervision of the Inspectors are too large to allow for a proper examination of every compound once a week. I recommend that the area should be further divided up and an Inspector placed in charge

Section IV. (Contd.)

charge of each. I suggest:

Area A. become areas Ataka,
Jamagbo-Isale Oshun.

Area B. Become areas Balogun,
Abua,

Area D. become area Owe-Ope,

the Hausa quarter.

Area D become Italorun-Isale Kegbe,
Olayo-Olugun,
Inworo-Abatedo.

The European reservations remain as before but include the station village.

This would give ten sanitary areas.

The Staff would be

1 Medical Officer of Health.
1 European Sanitary Inspector Grade I.
1 European Sanitary Inspector Grade II.
10 African Sanitary Inspectors.
1 African Sanitary Inspector for meat, markets and Slaughter houses.
10 Gangs of 1 headman and 6 labourers per area

10 headmen
60 labourers
1 Mosquito gang.
1 headman
10 labourers.
2 Bath Attendants.
10 Incinerator men.
1 Incinerator headman.
1 Slaughter house master.
2 Meat market masters.
2 Market Masters.
1 Ambulance Motor Driver.

Ede

Section IV. (Contd.)

charge of each. I suggest:

Area A. become areas Abeka,
Jamgbo-Isale Osinun.

Area B. Become areas Balogun,
Abua,

Area D. become area Owe-Ope,

the Hausa quarter.

Area D become Ibaiorun-Isale Agbe,
Olayo-Olugun,
Inworo-Abelado.

The European reservations remain as before but

include the station village.

This would give ten sanitary areas.

The Staff would be

1 Medical Officer of Health.
1 European Sanitary Inspector Grade I.
1 European Sanitary Inspector Grade II.
10 African Sanitary Inspectors.
1 African Sanitary Inspector for meat, markets
and Slaughter houses.
10 Gangs of 1 headman and 5 labourers per area

10 headmen
50 labourers
1 Mosquito gang.
1 headman
10 labourers.
2 Bath Attendants.
10 Incinerator men.
1 Incinerator headman.
1 Slaughter House master.
2 Meat market masters.
2 Market Masters.
1 Ambulance Motor Driver.

The

Section IV. Ede.

1. Water Supply.

As elsewhere, the most important factor in the sanitation of a town is the water supply. This may be derived from the Oshun River at a point above the town. Unfortunately this is at some distance from the highest point of ground which is itself in the town namely about square M:21. Whereas all pumps, sedimentation settling tanks and filters, and the chlorinating plant may be placed at the intake, fairly close to the station, this is offset by the expense of a long feed pipe to the reservoir at the top of the hill.

Cost £70,000.

2. Canalisation of Streams.

In their courses through the wet season swamps at the north end of their valleys, the streams should be canalised with turf edging belts. Higher up, however from about G:10 onwards these drains are not suitable.

The one following the course of the road should be of similar cross section but instead of the outer edges being turfed, the whole floor of the drain should be concrete or stone, and as space is restricted between the road and the houses, it should be considerably deeper.

Where the water courses run between the houses the edging may be dispensed with although a somewhat larger half-egg cross-section will have to be adopted to make up for them. In many places the wate course has eaten its way into the rocksurface. These should be used and smoothed out, any deep pockets being concreted in. 2½ miles of the Ife type, ¾ of a mile of the roadside type, and 1 mile of the larger semi-egg type of drain are required.

Contour drains, simple earth ones, are indicated on the plan and measure in all more than five miles and less than six.

cost

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2. Canalisation of Streams.

In their courses through the wet season swamps at the north end of their valleys, the streams should be canalised with turf edging boils. Higher up, however from about 8:10 onwards these drains are not suitable.

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Contour drains, simple earth ones, are indicated on the plan and measure in all more than five miles and less than six.

cost

Section IV. (Contd.)

Cost: Canalisation £42,500.
Earth Drains 264
Total £42,764

3. Bush Clearing.

There is very little amount of bush to be cleared in the town. On account of the large circumference of the town, the cost is somewhat high.

Cost: £7,744.

4. Public Baths.

A suitable site is the neighbourhood of square H:16

Cost: £3,291.

5. Laundry Benches.

One to each sanitary section of the town, and an extra one for the Afin: i.e. twelve benches.

Cost: £288.

6. Conservancy.

For the same reasons as those given for Oshogbo, Ilesha and Ife, the pit latrine is the only possible one for Ede. No action is required by Government other than the present one of supervision of construction of private pits, one to each compound.

Public latrines however are required near the Court House in L:11, and near the market in H:9. I recommend smoke latrines combined with incinerators at these points.

Cost: Two incinerator latrines at £30 each = £60.

7. Refuse Disposal.

The £9 type of incinerator at every local central point is the solution of the problem in Ede because of the lack of roads. There are 33 quarters in the town; these should be divided into eleven sanitary areas of about equal size (from the number of compounds contained in them) and two incinerators and a drying shed placed in each. Twenty-two incinerators may appear a large number for Ede but they are not too many when it is remembered that the town produces

enormous

Section IV. (Contd.)

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Earth Drains 264

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enormous

Section IV. (Contd.)

enormous amounts of rubbish and that the people, at first at any rate, are not going to walk far with it to the nearest incinerator if it is not close by.

Of these incinerators two are to be combined with public latrines and their costs have been considered under paragraph 6.

Cost: 20 incinerators £180
Tools 20
£200

8. Slaughter House.

A good site is on the south bank of the River in square J:4. A short road will be required to join it to the main road. It will be fitted with the pier to discharge offal etc., into the river.

Cost: £1,000.

9. Meat Market.

This should be put up on the western fringe of the present main market in square I:10 well away from the road. A small size is all that is required.

Cost: £700.

10. Market.

In the main markets 5 sheds will be built along the road and at right angles to it.
Two smaller markets of 2 sheds each should be sited in the vicinity of squares L:16 and F:16.

Cost: 9 sheds £720.

11. Schools.
13. Dispensary.
14. Maternity and Child Welfare.

These should be housed in one building under one Medical Officer. The site should be central close to the Court House and the Market i.e. about square I:11.
If it could be obtained the corner would be best.
Patients would be hospitalised to Oshogbo.

The

Section IV. (Contd.)

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These should be housed in one building under one Medical Officer. The site should be central close to the Court House and the Market i.e. about square I:11. If it could be obtained the corner would be best. Patients would be hospitalized to Oabogbo.

The

The building would consist of:

1 Consulting Room
1 Maternity Examination Room
1 Room for baby and School Examination Work
1 General Treatment Room
1 Pharmacy and Office.
1 Large Open Waiting Room.

Cost: 6 Rooms at £240 = £1,440.

16. Sanitary Staff and Duties.

The European Staff would be a Medical Officer of Health, a Grade I European Sanitary Inspector and a Grade II European Sanitary Inspector for mosquito work.

There would be eleven sanitary areas. An African Sanitary Inspector would be in charge of two areas. The Inspector in charge of the eleventh area would also be in charge of meat inspection and that of slaughter houses and markets.

The staff would be:

1 Medical Officer of Health.
1 European Sanitary Inspector Grade I.
1 European Sanitary Inspector Grade II.
6 African SanitaryInspectors
6 Gangs of 1 headman and 6 labourers per area.
6 headmen
36 labourers
1 Mosquito gang
1 headman
10 labourers
2 Bath attendants
1 Incinerator headman
10 Incinerator men
1 Slaughter House Master
1 Meat Market Master
1 Market Master.

Township.

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6 headmen
36 labourers
1 Mosquito Gang
1 headman
10 labourers
2 Bath attendants
1 Incinerator headman
10 Incinerator men
1 Slaughter House Master
1 Meat Market Master
1 Market Master.

Township.

Section IV. Ibadan Township.

Township.

This is up to date in almost every respect. The only improvements which I recommend are in the slaughter house, market and meat market.

8. Slaughter House.

The present one should be replaced by the standard pattern on the same site. Cost £800'

9. A meat market of the large type is required in the market in square V.7. Cost £1,200.

10. 8 Sheds should replace the many stalls in the market. Cost £640.

Ibadan.

1. Water Supply.

This is essential for the whole town; the Public Works Department have already prepared a scheme to the plans of Mr.H.G.Peake. I recommend that they be carried out.

Cost £300,000.

2. Canalisation of Streams.

Canalisation of Streams: This requires to be done on an extensive scale. As will be seen from the plan more than ten and less than twelve miles of canalisation as well as more than twenty-five and less than thirty miles of earth contour drains enter into the scheme. As it is of such magnitude, I recommend that it would be cheaper in the end to have the work planned and carried out by a qualified drainage engineer who, amongst his qualifications has that of experience in anti-malarial works. Similar problems elsewhere have shown that this experience is essential.

As an illustration of the problems, I cite the Ogunpa stream which in the two miles from the Agbeni road (Square T.10) to the Bukaw market has a fall of only two feet.

I therefore give provisional estimates only.

Costs	Canalisation ...	£120,000
	Contour drains ...	1,320
	Total ...	£121,320

Section IV. Ibadan Township.

Township.

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As an illustration of the problems, I cite the Ogunpa stream which in the two miles from the Agbeni road (Square T.10) to the Bukew market has a fall of only two feet.

I therefore give provisional estimates only.

Canalisation	...	£120,000
Contour drains	...	1,320
Total	...	£121,320

Section IV. (Contd.)

3. Bush Clearing.

When the swamp areas which will be dried up by the drainage scheme, and those of bush in the town proper, are all taken into consideration, three square miles require clearing. This includes a bordering strip of two hundred yards round the furthest line of houses on the edge of the town. As has been pointed out in the reports on other towns, this is essential so that no one will have the easy alternative to proper refuse disposal.

Although more expensive in first costs, root clearance is cheaper in the long run.

The nuisance of bush in compounds and private property in the town should be regorously prevented by the machinery already existent.

Borrow pits: these should be suppressed in the same manner and no new one allowed without permission first having been obtained from the Sanitary Authority.

Cost: £38,730.

4. Public Baths.

I recommend four twin baths: judging by the bathing that goes on in the streams at present suitable spots are in or near to squares R:9. R:17. O.21. and L:12.

Cost: 4 baths at £3,291 ... ... £13,164.

5. Laundry Benches.

40 are required placed evenly throughout the town according to the population density. Cost £960.

6. Conservancy.

The present system of salgas should be carried through to its reasonable conclusion. The machinery exists for the provision of a pit to every house; all that remains is to have it rigidly enforced. With proper supervision they would be kept in good repair.

On the edges of the swamps, it has been reported that these salgas go down below the water table and so the excrement falls directly into the water. This will not matter when the population no longer uses this ground water

Section IV. (Contd.)

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Although more expensive in first costs, root clearance is cheaper in the long run.

The nuisance of bush in compounds and private property in the town should be vigorously prevented by the machinery already existent.

Borrow pits: these should be suppressed in the same manner and no new one allowed without permission first having been obtained from the Sanitary Authority.

Cost: £38,750.

4. Public Baths.

I recommend four twin baths: judging by the bathing that goes on in the streams at present suitable spots are in or near to squares R:9. R:17. O.21. and L:12.

Cost: 4 baths at £9,291 ... ... £37,164.

5. Laundry Benches.

40 are required placed evenly throughout the town according to the population density. Cost £960.

6. Conservancy.

The present system of sedges should be carried through to its reasonable conclusion. The machinery exists for the provision of a pit to every house; all that remains is to have it rigidly enforced. With proper supervision they would be kept in good repair.

On the edges of the swamps, it has been reported that these sedges go down below the water table and so the excrement falls directly into the water. This will not matter when the population no longer uses this ground water

Section IV. (Contd.)

water for any purpose.

Eight-hole public pit latrines fitted with adjoining incinerators to convert them into smoke latrines are recommended at the following points:-

At the upper end of Bukaw Market (Q:22)
Awba Market (O:15)
Olugbode Market (L:13)
On the higher ground of Agbeni Market (R:13)
Ayeye Market (N:11)
On the higher ground of Inalende Market (Q:5)
Oje Market (1.8).
Agodi Market (F.6)

All schools should be made to provide latrine accommodation on the lines of that at the Government School at the rate of one hole per thirty children, with a minimum of two, one for each sex.

Cost 8 latrines at £30 = £240.

I have not included the cost of the provision of septic tanks to the many houses of Government Officials.

7. Refuse Disposal.

It is unnecessary to make any recommendations on this subject as the Native Administration estimates 1930/31 contain provision for two Ford refuse lorries, by means of which on their arrival, garbage will be disposed of in accordance with the plan devised by Major Otway at Sekondi. This has been found the most economical and useful method in a town which has some resemblance to Ibadan.

8. Slaughter Houses.

Two are required, one in Lakanlu (R.7) and the other in Olugbode (M.16).

Cost 2 @ £800 = £1,600.

9. Meat Markets.

Four small markets are needed, at Agbeni (Q.13) Bukaw (P.24), Olugbode (L.13) and at Oje (H.8).

Cost 4 @ £700 = £2,800.

10. Markets.

8 sheds should replace the present stalls in each of the markets at Oje (H.8), Agbeni (R.12 and Bukaw P.24). At Inalende (Q.6), Awba (O.15) and Olugbode (M;16) FOUR SHEDS EACH WOULD BE SUFFICIENT.

Cost: 36 sheds @ £80 = £2,880.

Section IV. (Contd.)

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Eight-hole public pit latrines fitted with adjoining incinerators to convert them into smoke latrines are recommended at the following points:-

At the upper end of Bukew Market (Q:22)
Awba Market (O:15)
Olugbode Market (L:15)
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Ayeye Market (N:11)
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Oje Market (I.8).
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FOUR SHEDS EACH WOULD BE SUFFICIENT.

Cost: 36 sheds @ £80 = £2,880.

Section IV. (Contd.)

11. Schools.

I recommend that the work begun last year by Dr. Jones should be developed into a routine to embrace all the schools of Ibadan. With the large school population this is a whole time post.

The School Medical Officer's Centre should be in the same building as the Central Dispensary at Awba. This would allow of full co-operation in treatment with the Native Administration Hospital. The costs of the building are dealt with in paragraph 13.

Cost of equipment £150.

13. Dispensaries:

As reported elsewhere one is about to be opened in Olugbode (L.13). I recommend that others be opened also in proximity to the other projected markets at Bukaw, Awba, Agbeni, and Inalende. One is not required at Oje which lies half way between the Agodi Dispensary and the Hospital. Each should be in charge of an African Nurse trained at the Hospital. They should be open all day and be visited at a fixed hour by a Medical Officer who should be added to the staff of the Hospital. In this way there would be perfect co-operation between the Hospital and the dispensaries.

Except for the Awba (Central-Dispensary) the buildings would consist of a consulting room; a treatment room, office and pharmacy combined; and a large open waiting room.

The Awba (Central) Dispensary should be larger as it would be the headquarters of the Dispensary Medical Officer. Under the same roof would be housed the School clinic. The building would contain two consulting rooms, one office and pharmacy, one general treatment room, one school treatment room, and one large open waiting room divided into two portions, one for general patients, the other

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other

Section IV. (Contd.)

other for school children.

Cost 1.	7 rooms @ £240	=	£1,680
	Equipment	=	200
3.	3 rooms @ £240	=	2,160
	Equipment	=	150
	Total		£4,190

14. Maternity and Child Welfare.

In section III I have recommended that Ibadan should be a School Centre in this subject. Here I believe it would be wise to split the institution into two by having the school proper with a clinic attached in the near vicinity of the Native Administration Hospital. (K.8) and to have a further clinic adjoining the central Dispensary at Awba (0.15). The latter would be of three rooms, a consulting and examination room, a treatment and baby room, and a waiting room.

Cost of standard teaching centre	£6,000
Cost of three room clinic	720
Total	£6,720

15. Infectious Diseases Hospital.

As already reported a hospital is about to be built.

16. Sanitary Staff and duties.

The Native Administration has developed to such an extent in Ibadan that it is advisable to leave sanitary inspection etc., in their hands as much as possible. I discussed the whole matter with the Resident Mr.Ward Price and with him came to the conclusion that the following scheme would be most acceptable.

The titular head of the African Sanitary Inspectors would be a Senior Chief immediately under the Bale. This man should be chosen for his intelligence and his up-to-dateness in the way he looks upon sanitary matters. A man who is swayed by the tradition of the past will be useless. He must also be a strong man who can rule in sanitary matters with a firm hand. Immediately under him there should be an African Chief Sanitary Inspector a local man who will have graduated from the Ibadan Sanitary School and who will also

have

Section IV. (Contd.)

other for school children.

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Equipment = 200

3. 3 rooms @ £240 = 2,160
Equipment = 150

Total £4,190

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15. Infectious Diseases Hospital.

As already reported a hospital is about to be built.

16. Sanitary Staff and duties.

The Native Administration has developed to such an extent in Ibadan that it is advisable to leave sanitary inspection etc., in their hands as much as possible. I discussed the whole matter with the President Mr. Ward Price and with him came to the conclusion that the following scheme would be most acceptable.

The titular head of the African Sanitary Inspectors would be a Senior Chief immediately under the Bale. This man should be chosen for his intelligence and his upto-dateness in the way he looks upon sanitary matters. A man who is swayed by the tradition of the past will be useless. He must also be a strong man who can rule in sanitary matters with a firm hand. Immediately under him there should be an African Chief Sanitary Inspector a local man who will have graduated from the Ibadan Sanitary School and who will also have

Section IV. (Contd.)

have shown himself to be reliable. Actually he will do all the work and only refer knotty problems and disciplinary matters to the Chief.

Behind the Chief in an advisory capacity will be the European Sanitary Inspector in charge of the Sanitary School. His functions to the Chief would parallel those of the District Officer to a native Chief in the political field. He will thus be able to correlate the theoretical teaching of the school with the practical demonstrations of actual work in Ibadan.

The town should be divided up into fifteen sanitary areas with an African Sanitary Inspector in each. Two Inspectors will be required, one for slaughter house inspection, the other for food and market inspection.

The mosquito work will be large enough to need two gangs.

The Sanitary Staff would be

1 Medical Officer of Health
1 European Sanitary Inspector Grade 1
2 European Sanitary Inspectors Grade 2
1 Native Chief
1 African Chief Sanitary Inspector
15 African Sanitary Inspectors
2 African Sanitary Inspectors for food, Slaughter house and market inspection
15 Gangs of 1 Headman and 6 labourers per area.
[15 Headmen.
90 Labourers]
2 Mosquito Gangs
[2 Headmen
20 Labourers]
8 Bath Attendants
8 Latrine Attendants
32 Slaughter House Masters
4 Meat Market Masters
6 Market Masters

As I do not know the details of the refuse disposal scheme, I am unable to give the staff which will be required to work it. This will be additional to the above.

1. Water

Section IV. (Contd.)

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As I do not know the details of the refuse disposal scheme, I am unable to give the staff which will be required to work it. This will be additional to the above.

J. Water

Section IV Abeokuta

1. Water Supply.

A modern system is now being installed.

2. Canalisation of streams.

Two miles of this is required as shown on the plan, also more than four and less than six miles of earth contour drains.

The Banking of the River. The river provides the great problem in mosquito control as all along its banks are patches of marsh land which vary according to the height of the stream. These spots provide ideal breeding places for the A.gambiae; I found the larvae in one of the grassy patches of moisture as I was walking across though I was not specially on the look out for them. Ordinary drainage schemes are useless as drains which would serve during the dry season would be submerged and destroyed during the rains. Those built to cope with the wet season swamps would be useless for more than half the year.

There remain two possible solutions, the flushing out of the river by a collapsible dam at weekly intervals or the canalisation of the River past the town. The former scheme would be extremely costly as two or even three of these dams would be required in the two mile course of the river past the town. There remains the building up of the banks with sheet piling and the filling in behind them. This would do away with the swamps along the river edge as the filled in area would be properly drained. It is difficult to give an estimate of the cost of the work as little is known of the composition of the river bed. However a very rough outside figure of £25,000 - per mile of bank would alow for all contingencies. Probably when all the necessary information became available the work could be done for less.

Cost.

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Cost.

Section IV. Abeokuta (Contd.)

Cost	Canalisation	£20, 000
	Contour drains	£ 264
	Banking	£75, 000

3. Bush Clearing.

There is a considerable amount to be carried out in the town; the straggling nature of the inhabited area further increases it. I estimate that two square miles will have to be cleared but this includes the clear belt round the limit of habitation on the town edges but not the present semi-bush, semi-swamp area along the Orun River's left bank.

Cost £25,800.

4. Open Air Baths.

Three sets of baths are required at sites Q:18, J:6 and D:21.

Cost : 3 at £3291 = £9873.

5. Laundry Benches.

25 of these are required placed about the town according to the density of the population.

Cost: £600.

6. Conservancy.

As has been pointed out this is a very serious problem in Abeokuta. The salga system which I have recommended as best for the other towns reported on is impossible here on account of the shallowness of the soil. There remains the bucket system which is a very unsatisfactory method even at best; this however is also impracticable because there is, or rather very shortly will be, no place where the pail contents can be properly buried. Were there roads leading to all parts of the town,, there could be a proper motor collection each day from every house and the pails taken to a sewage farm below Aro. The cost of providing these roads puts this out of court as the money required could be better employed in providing a water carriage system.

Although

Section IV. Absokuta (Contd.)

Cost Canalisation £20,000

Contour drains £ 264

Banking £75,000

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Although

Section IV. (Contd.)

Although expensive, I believe it to be the only solution.

The farm would be below Aro and the effluent would be discharged into the River. It is out of my province to recommend what the type of the farm should be, but continuous flow settlement tanks, rotating filters, and humus tanks are pretty well foolproof, and except for the filter arms, require no special machinery from home. The main sewer could be placed parallel to the River just above highest water mark and the secondary sewers would follow the natural lines of drainage. As will have been appreciated from this report, the drainage fall throughout the town is very good.

The water closets would be the continuous trough pattern with ten openings to the trough with an automatic flush. I recommend that the automatic closing shutters should be fitted to the holes which are only opened when pressure is applied to the foot blocks on either side. This will prevent refuse being thrown down into the trough. Each public latrine would consist of one trough with six holes for women and four for men. There would be a labourer in constant attendance a point which is very important as otherwise the latrine will almost certainly go out of order.

The estimate of the population which has been given to me is 60 thousand but this is conservative. A possible figure is a hundred thousand. Taking this as a working estimate, which will allow for the increase of the population and allowing one hole per fifty persons, it works out that 200 latrines will be required dotted evenly over the inhabited area.

I have not referred to the water supply as an adequate system is about to be installed as reported elsewhere in this report. An additional reservoir of 240,000 gallons will be required although the plant itself

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Section IV. (Contd.)

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is sufficient as at present planned.

Of course without detailed knowledge of the scheme only the most approximate of costings can be made. This is put at £100,000.

7. Refuse Disposal.

There are already twenty seven incinerators in the town. I recommend that their number should be made up to fifty and that the non permanent type be replaced by the permanent £9 - type.
This will mean the provision of 47 incinerators and fifty drying sheds. Lack of roads throughout the town precludes the use of motor collection and a central disposal battery.

Cost:	47 Incinerators	£423
	50 Sheds	£250
	Tools	£ 20
	Total	£693

8. Slaughter Houses.

Two are required in squares X:21 and R:8. The former is already provided with an enclosed concrete floor and office, so I subtract £300 from the total cost of £1000 which includes the pier into the river.

No site is possible which is not on the river bank because of the impossibility of disposing of the offal etc.

Cost of	X: 21	£700
	R: 8	£1000
	Total	£1700

9. Meat Market.

Three large meat markets are required, at Lafenwa, Itoku and Iberekodo, and two smaller ones at Ijaiye and Ibara.

Cost	3 markets at	£1200	= £3600
	2 markets at	£ 700	= £1400
		Total	= £5000

Section IV. (Contd.)

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Cost 3 markets at £1200 = £3600
2 markets at £ 700 = £1400
Total = £5000

Section IV. (Contd.)

10. Markets.

Permanent sheds are required in all the eight markets.

The following are required,

Lafenwa Market		10 sheds
Iberekodo	"	10 "
Itoku	"	10 "
Shapon	"	5 "
Ijaiye	"	5 "
Onida	"	5 "
Itoko	"	5 "
Adatan	"	5 "
Ibara	"	5 "

Total 60 sheds.

Cost £4800.

11. Schools.

I recommend the appointment of an Assistant Medical Officer of Health whose main duty would be that of school Work. A building is required in the vicinity of the clinic of the Maternity and Infant Welfare so that there can be continuity of the work when the infants become of school age. Other duties would be to relieve the Medical Officer of Health of some of the routine work in the town, so that he would have the time and opportunity to develope health work in the almost unexplored major part of his area of the province of Abeokuta.

The building would consist of a consulting room, a pharmacy and office, a treatment room and a large open waiting room.

Cost.	4 rooms	= £960
	Equipment	= £150
	Total	£1110

12. Dispensaries.

None are required.

13. Maternity and Child Welfare.

The present work is being carried out so admirably that I have no recommendations to make as to its improvement, other than it should be housed in the standard school with the standard equipment.

Cost: £6000.

Section IV. (Contd.)

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Iafemwa Market	10	sheds
Iberekodo	10	"
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Shagon	"	"
Ijaiye	"	"
Onida	"	"
Ikoko	"	"
Adaban	"	"
Ibara	"	"

Total 60 sheds.

Cost £4800.

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The building would consist of a consulting room, a pharmacy and office, a treatment room and a large open waiting room.

Cost. 4 rooms = £960

Equipment = £150

Total £1110

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None are required.

13. Maternity and Child Welfare.

The present work is being carried out so admirably that I have no recommendations to make as to its improvement, other than it should be housed in the standard school with the standard equipment.

Cost: £6000.

Section IV. (Contd.)

15. Infectious Disease Hospital.

I recommend the building of a road to the present hospital which in its present form is all that is required for the town.

16. Sanitary Staff and Duties.

The need to work through the Native Administration in the same strict fashion which is required in Ibadan is not apparent in Abeokuta. For the sake of smoothness in operation, the Alake's support should be enlisted in a projected schemes before they are begun.

The present four sanitary areas should be divided into eight. The staff would consists of :-

1 Medical Officer of Health

1 European Sanitary Inspector Grade 1

1 European Sanitary Inspector Grade 2

8 African Sanitary Inspectors

1 Slaughter house & meat Inspector

1 Market & Food Inspector

8 Gangs of 1 headman & 6 labourers
8 headmen
48 labourers

1 Mosquito gang
1 headman
10 labourers.

6 Bath attendants

200 Latrine attendants

25 Incinerator men

2 Incinerator headmen

2 Slaughter house masters

5 Meat Market Masters

9 Market Masters.

The staff of the sewage farm and severmen are not included.

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Section V.

COSTS.

	Ife £	Ilesha £	Oshogbo £	Ede £	Ibadan Township £	Ibadan £	Abeokuta £	Total £
ter Supply	15,000	75,000	63,500	70,000	-	300,000	-	523,500
alisation(a)	50,000	50,000	40,000	42,500	-	120,000	20,000	322,500
tour Drains (b)	440	572	132	264	-	1,320	264	2,992
d Filling(c)	735	-	-	-	-	-	-	735
ng bricking up (d)	150	-	-	-	-	-	75,000	75,150
h Clearing	2,000	8,746	6,200	7,744	-	38,730	25,800	89,220
lic Baths	3,291	3,291	3,291	3,291	-	13,164	9,873	36,201
ndry Benches	240	264	360	288	-	960	600	2,712
servancy	130	130	1,300	60	-	240	100,000	101,860
use Disposal	593	712	183	200	-	-	693	2,381
ughter Houses	800	800	800	1,000	800	1,600	1,700	7,500
t Markets	2,600	1,200	1,900	700	1,200	2,800	5,000	15,400
kets	800	960	880	720	640	2,880	4,800	11,680
ools	150	-	1,110	-	-	150	1,110	2,520
pensaries	2,500	-	-	1,440	-	4,190	-	8,130
.&Child Wel.	5,000	-	6,000		-	6,720	6,000	23,720
ect.Disease Hospital	460	-	4,860	-	-	-	-	5,320
	84,889	141,675	130,516	128,207	2,640	492, 754	250,840	1231,521
sing	9,480	6,750	4,020	9,480	-	8,140	4,070	41,940
Total	94,369	148, 425	134,536	137,687	2,640	500,894	254,910	1273,461

(a) Banking of River.

Total cost of the Scheme for the six towns: £1,273,461

Section V.

COSTS.

	Ife £	Ilesha £	Oshogbo £	Ede £	Ibadan Township £	Ibadan £	Abeokuta £	Total £
Water Supply	15,000	75,000	63,500	19,000	–	300,000	–	523,500
Reclamation(a)	50,000	50,000	40,000	42,500	–	120,000	20,000	322,500
Labour Trains	440	512	132	264	–	1,320	264	2,992
Land Filling(c)	725	–	–	–	–	–	–	725
Training bricklaying up (d)	150	–	–	–	–	–	75,000	75,150
Main Clearing	2,000	8,746	6,200	7,744	–	38,750	25,800	89,220
Mobile Baths	3,291	3,291	3,291	3,291	–	19,164	9,813	36,201
Laundry Barrows	240	264	360	288	–	960	600	2,712
Reservancy	150	150	1,300	60	–	240	100,000	101,860
Refuse Disposal	593	712	187	200	–	–	693	2,381
Slaughter Houses	800	800	800	1,000	800	1,600	1,700	7,500
Cattle Markets	2,600	1,200	1,900	700	1,200	2,800	5,000	15,400
Latrines	800	960	880	720	640	2,880	4,800	11,680
Schools	150	–	1,110	–	–	150	1,110	2,520
Dispensaries	2,500	–	–	1,440	–	4,190	–	8,130
W.A.C.H.I.Old Wel.	5,000	–	6,000		–	6,720	6,000	23,720
Infect.Disease Hospital	460	–	4,860	–	–	–	–	5,320
	84,389	141,675	130,318	128,207	2,640	492,754	250,840	1231,521
Planting	9,480	6,750	4,020	9,480	–	8,140	4,070	41,940
Grand Total	94,369	148,425	134,338	137,687	2,640	500,894	254,910	1273,461

* Banking of River.

Total cost of the Schemes for the six towns: £1,273,461

Section VI. Appendix I.

746/DMS
10th April, 1930.

DIRECTOR OF MEDICAL & SANY:SERVICE,
L A G O S.

DR. D. D. ANDERSON,
C/O MEDICAL OFFICER OF HEALTH,
L A G O S.

Sanitary Investigations - Oyo and Abeokuta Provinces.

I interviewed the Resident, Oyo Province yesterday, and he has promised every assistance in your investigations.

2. You are to proceed in the first place to Ife arriving there on Wednesday 16th instant, and staying at the Rest house and afterwards you make your own arrangements as regards the towns you are to visit, of course informing the Resident of your movements and keeping in close touch with the Administrative Officers.

3. You might adivse me when you are likely to visit Abeokuta so that I can make the necessary arrangements with the Resident and get his co-operation.

4. A copy of the lines laid down along which the investigations are to be carried out is attached for your information and guidance.

5. I should be glad if you could have all the information in the hands of the Honourable Director of Medical and Sanitary Service by the end of the 2nd week in July.

6. In regard to hiring of lorry transport, all vouchers should be sent to this office, for checking. They should be paid localy at Ibadan or Abeokuta from the Sanitary Allocations to Medical Officers of Health there. If there are no funds available, the Medical Officer of Health should apply to the Assistant Director of Medical and Health Service, Enugu.

(Sgd.) W.Allan
for DIRECTOR OF MEDICAL & SANY: SERVICE.

Section VI. Appendix I.

DIRECTOR OF MEDICAL & SANY:SERVICE,
L A G O S.

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(Sgd.) W.Allan

for DIRECTOR OF MEDICAL & SANY: SERVICE.

Section VI. Appendix I. Contd.

Lines along which Sanitary Investigations in Oyo Province (Oshogbo, Ife, Ede, Ilesha and Ibadan) and Abeokuta Province are to be carried out.

1. Water Supply of these places, Cost.
2. School Inspections in above towns. Staff, Equipment, Buildings etc., Cost.
3. Incidence of
   Yellow Fever,
   Schistosomiasis,
   Malaria,
   Ankylostomiasis.
   as judged by school examination.
4. Question of Open Air Baths. Cost.
5. Question of Water Latrines. - FlushSystem, Bucket System, Cost.
6. Refuse Disposal, Carts, Lorries, Incinerators. Cost.
7. Sanitary Gangs, Sanitary Inspectors (including Europeans) and Vaccinators. Cost.
8. Proper hygienic markets, Cost.
9. Propaganda, Films, Lectures, Teaching in Schools, Cost.
10. Infant Welfare work, Staff Health Visitors, Competitions Baby Shows. Cost.
11. Infectious Diseases Hospitals, Ambulances, Cost.
12. Vital Statistics, System of Death Notification, Staff etc.
13. Compound Inspection (question of)
14. Dietetic disease and how it could be remedied, Staff, etc.

~~15.~~

The use of trained African Assistants must be considered in the scheme.

Section VI. Appendix I. Contd.

Lines along which Sanitary Investigations in Oyo Province (Oshogbo, Ife, Ede, Ilesha and Ibadan) and Abeokuta Province are to be carried out.

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3. Incidence of
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4. Question of Open Air Baths. Cost.
5. Question of Water Latrines. - Flush System,
Bucket System, Cost.
6. Refuse Disposal, Carts, Lorries, Incinerators. Cost.
7. Sanitary Corps, Sanitary Inspectors (including Europeans) and Vaccinators. Cost.
8. Proper hygienic markets, Cost.
9. Propaganda, Films, Lectures, Teaching in Schools, Cost.
10. Infant Welfare work, Staff Health Visitors,
Competitions Baby Shows. Cost.
11. Infectious Diseases Hospitals, Ambulances, Cost.
12. Vital Statistics, System of Death Notification, Staff etc.
13. Compound Inspection (question of)
14. Dietetic diseases and how it could be remedied, Staff, etc.

~~XXX~~

The use of trained African Assistants must be considered in the scheme.

Section VI. (Contd.)

Plan and measurements of the £9 type incinerator.	APPENDIX II
Designs for canalisation and earth drains.	APPENDIX III
Plan and measurements of laundry bench	APPENDIX IV
Plans and measurements of motor truck and trailer Morris make.	APPENDIX V. A
Ditto Ford make.	APPENDIX V. B
Plan of Slaughter House	APPENDIX VI.
Prices of Morris Ambulance	APPENDIX VII.A
Plans and prices of Ford Ambulance	APPENDIX VII.B.

Section VI. (Contd.)

Plan and measurements of the 59 type Incinerator.	APPENDIX II
Designs for canalisation and earth drains.	APPENDIX III
Plan and measurements of Laundry bench	APPENDIX IV
Plans and measurements of motor truck and trailer Morris make.	APPENDIX V. A
Ditto Ford make.	APPENDIX V. B
Plan of Slaughter Houses	APPENDIX VI.
Prices of Morris Ambulance	APPENDIX VII.A
Plans and prices of Ford Ambulance	APPENDIX VII.B.

GRAPH I IBADAN.

	Mean Max. Temp.	Mean min Temp.	Mean rel Humidity.	Mean Rainfall.	Malarial Patients.
January	94.4	68.9	84%	0.27	25
February	96.5	69.3	83	0.95	18
March	96.6	70.7	85	3.85	22
April	93.8	71.7	87	6.25	24
May	90.5	70.5	88	5.91	25
June	88.2	69.3	89	6.71	24
July	85.3	68.8	91	7.15	25
August	84.7	67.4	91	3.43	25
September	86.5	67.8	90	7.13	19
October	90.2	70.9	87	5.81	35
November	92.0	69.9	87	1.54	36
December	92.8	69.7	88	0.37	35

GRAPH II ABEOKUTA.

January	90.2	68.1	81	0.68	5.25
February	90.1	67.9	87	1.10	8.75
March	90.5	68.4	87	3.13	4.25
April	91.5	69.3	88	6.10	7.50
May	91.1	67.9	90	5.77	7.75
June	89.5	65.9	88	6.68	18.33
July	89.9	65.1	89	6.44	14.33
August	89.3	65.2	86	2.19	10.33
September	88.3	64.0	86	6.33	12.66
October	89.9	63.8	89	3.52	9.33
November	91.8	68.1	87	1.06	9.33
December	90.9	64.0	85	0.42	8.66

GRAPHS I IBADAN.

Fig. I: Ibadan : the stream in R:14 below the slaughter slab. There are foeces on the sand of the stream bed and a refuse collection on the further bank.

Fig: II : Ibadan : the Agompa swamp. J:10.

Fig.III : Ibadan. A backyard in T:8. The swamp extends into it; there are refuse and old tins on the marshy ground. On the left is an enclosed pit latrine..

Fig.IV : Ibadan. A typical compound in S:9. In the middle distance there is a heap of refuse, which is also scattered everywhere. Large upright uncovered pots contain water. Note the ubiquitous goat.

Fig. V. Ibadan : Agbeni slaughter slab seperated by the Gege stream from the incinerator on the left which is not in use. In the right foreground is a heap of charred bones.

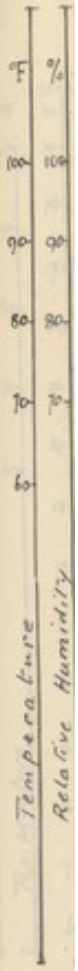
Fig. VI. Ibadan : Market scene in Agbeni. R:13
In the bacground are covered verandah-like stalls. The woman sitting in the mud is selling salt.

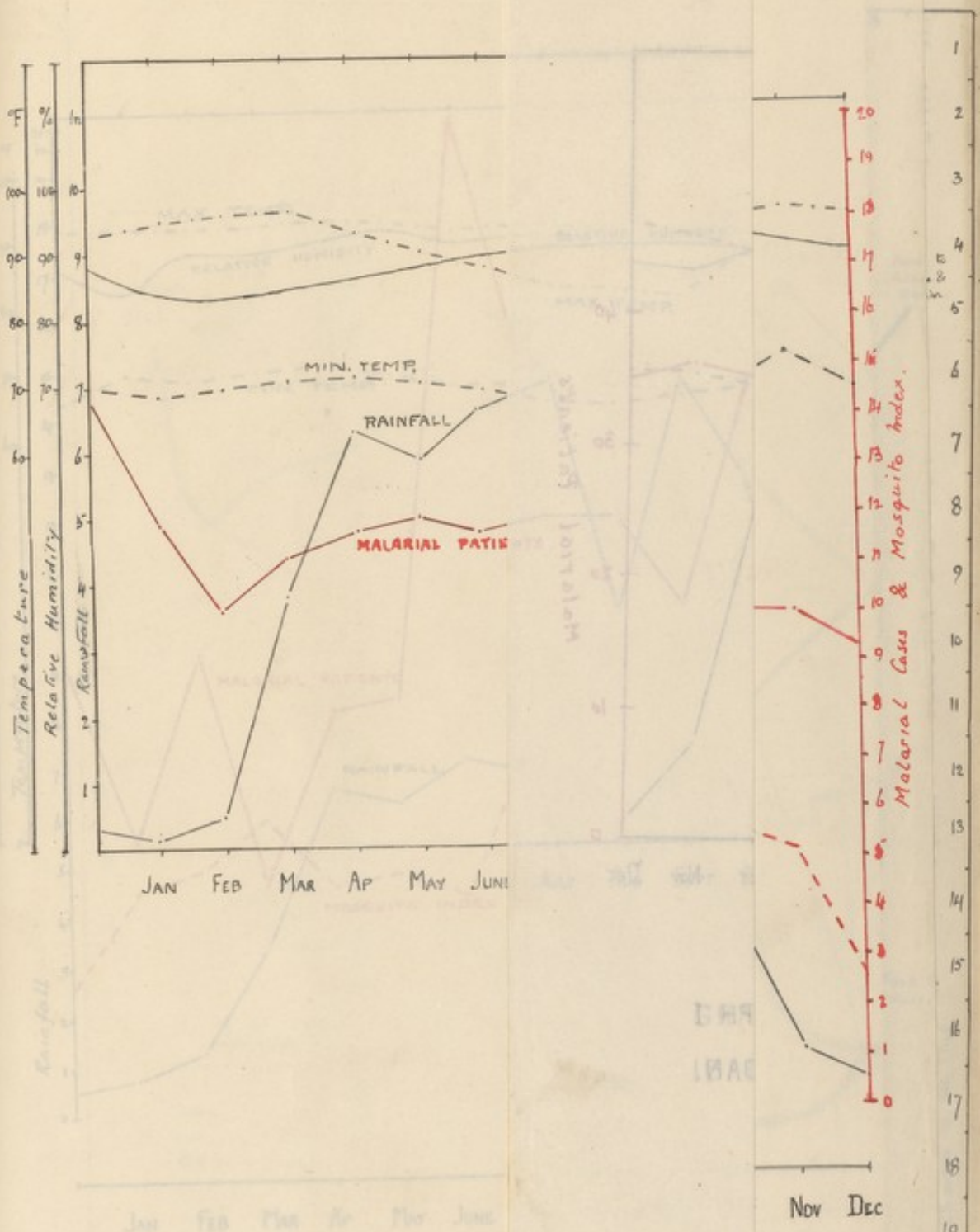
Fig. V. Ibadan : Agbeni slaughter slab separated by the bege stream from the incinerator on the left which is not in use. In the right foreground is a heap of charred bones.

Fig. VI. Ibadan : Market scene in Agbeni. R:19 In the background are covered verandah-like stalls. The woman sitting in the mud is selling salt.

Fig. VII : Abeokuta. The indigo dye industry. The pots contain the various evil smelling brews used in the process. Some of these harbour mosquito larvae.

Fig. VIII. A washing bench in use.

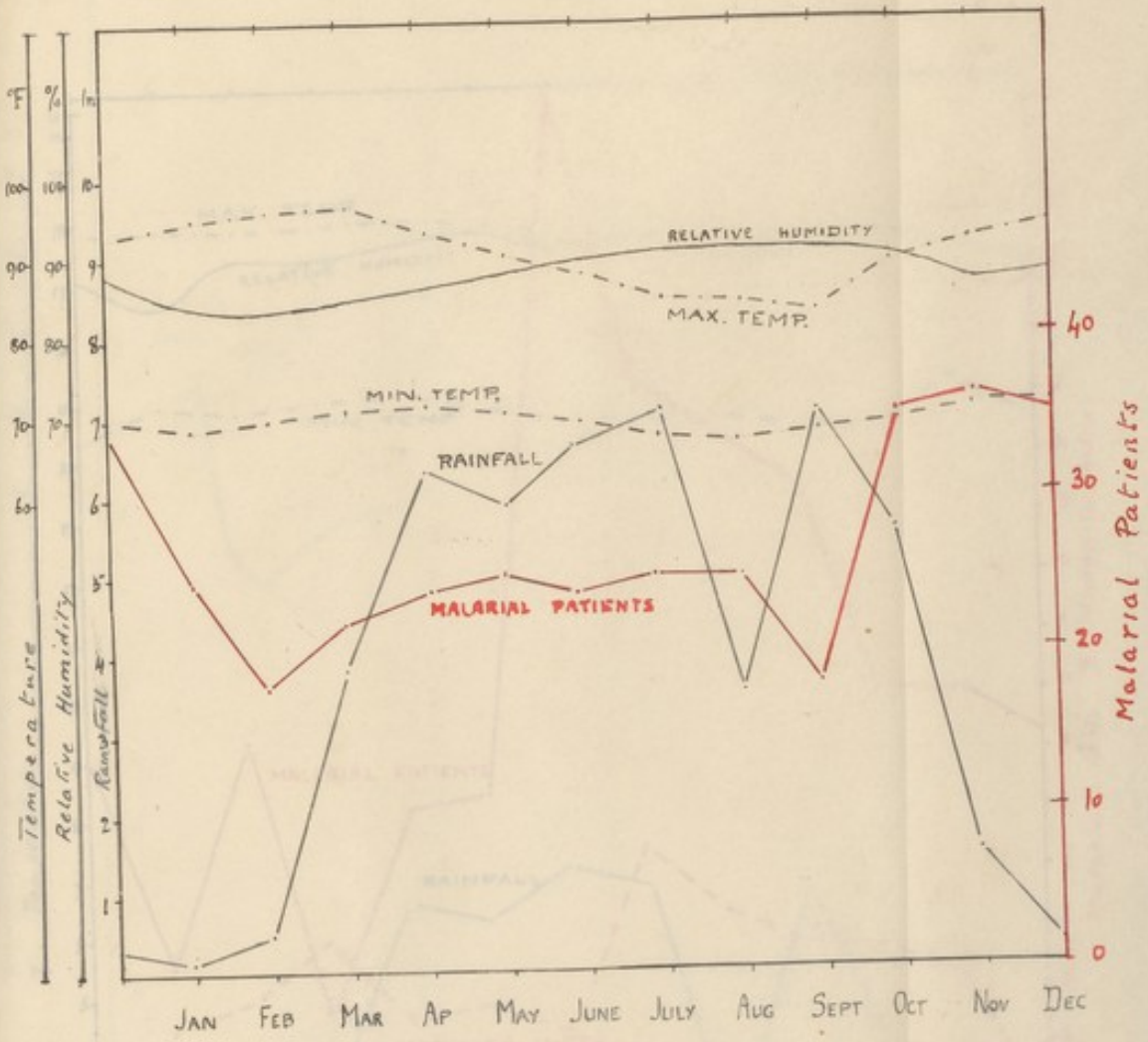

°F
%
100
90
80
70
60
Temperature
Relative Humidity


°F
%
Temperature
Relative Humidity
Rainfall
MIN. TEMP.
RAINFALL
MALARIAL PATIE
Malarial Cases & Mosquito Index.
JAN
FEB
MAR
AP
MAY
JUNE
NOV
DEC

H II

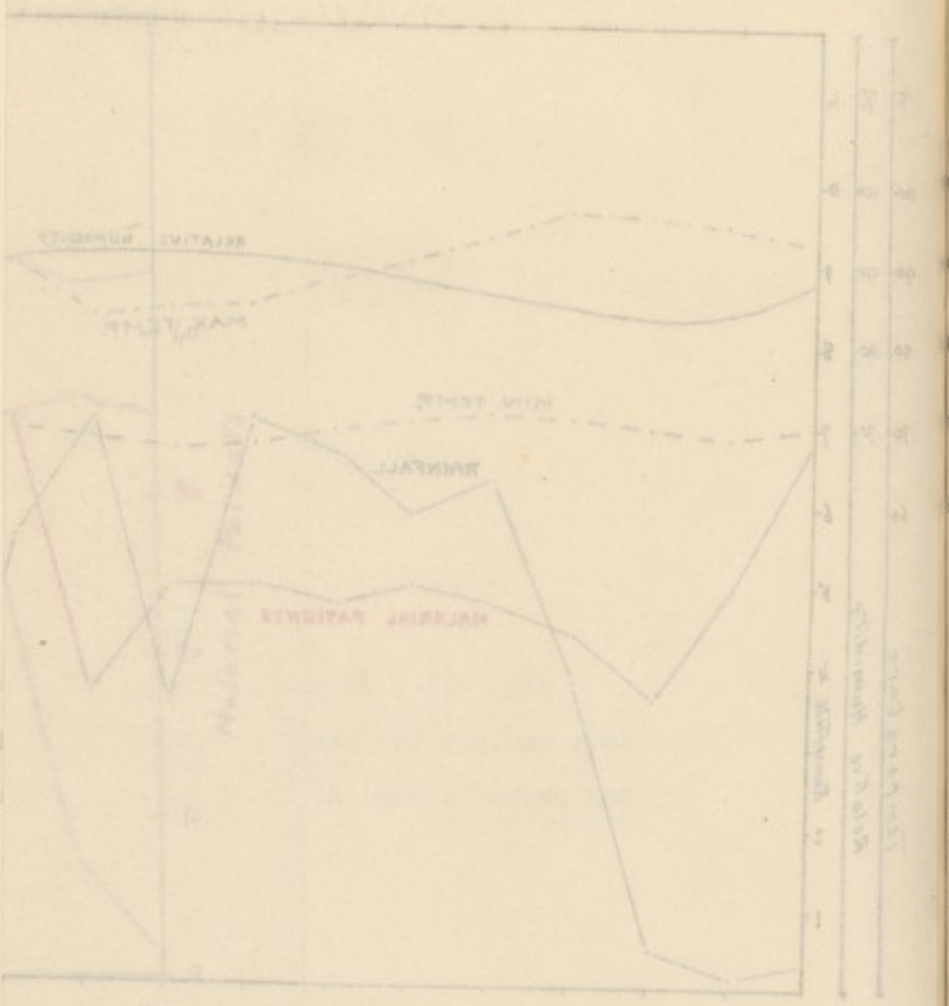
UTA.

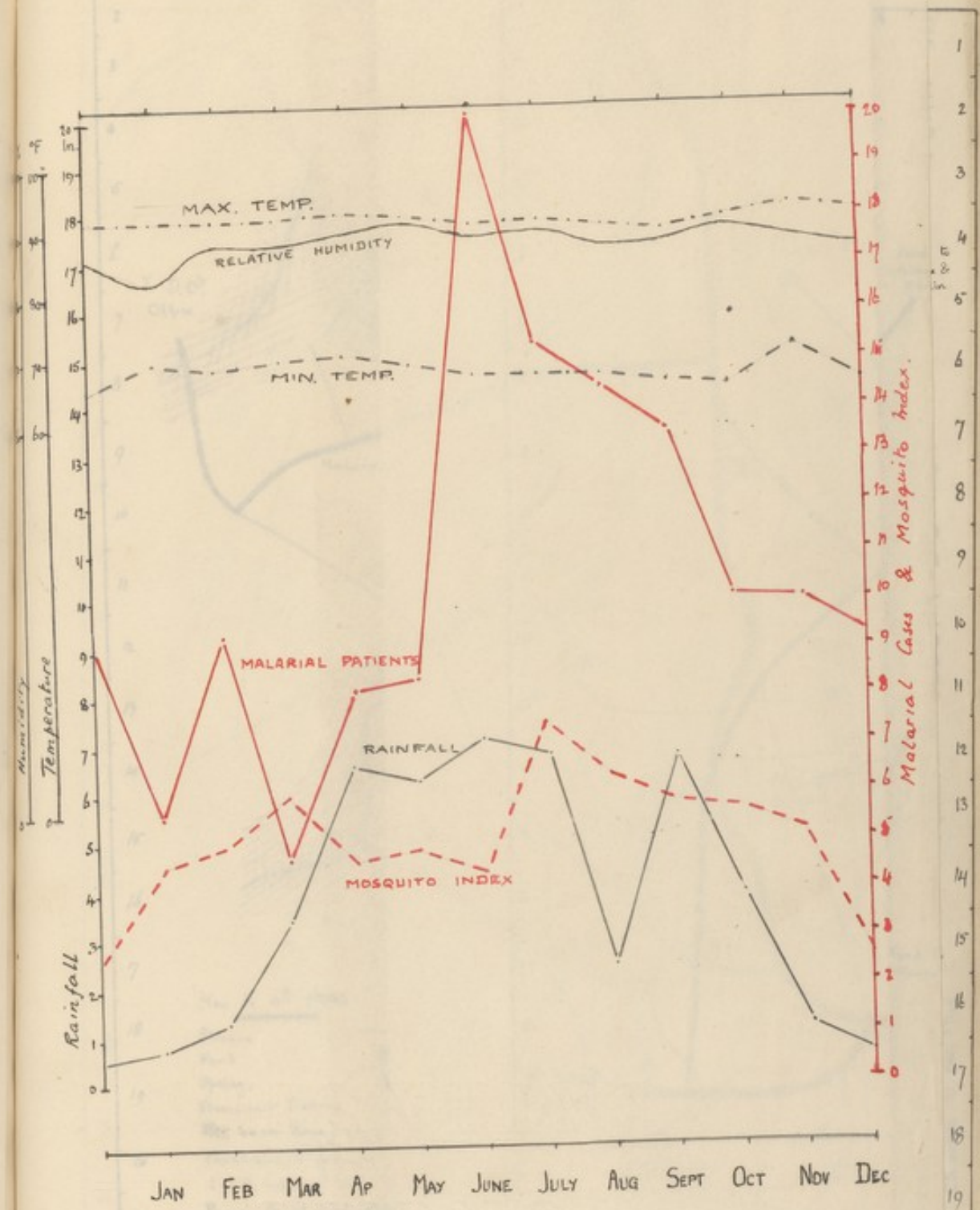
°F
%
100
90
80
70
60
100
90
80
70
Temperature
Relative Humidity



GRAPH I

IBADAN.


Humidity
Temperature
Rainfall



GRAPH II

ABEOKUTA.

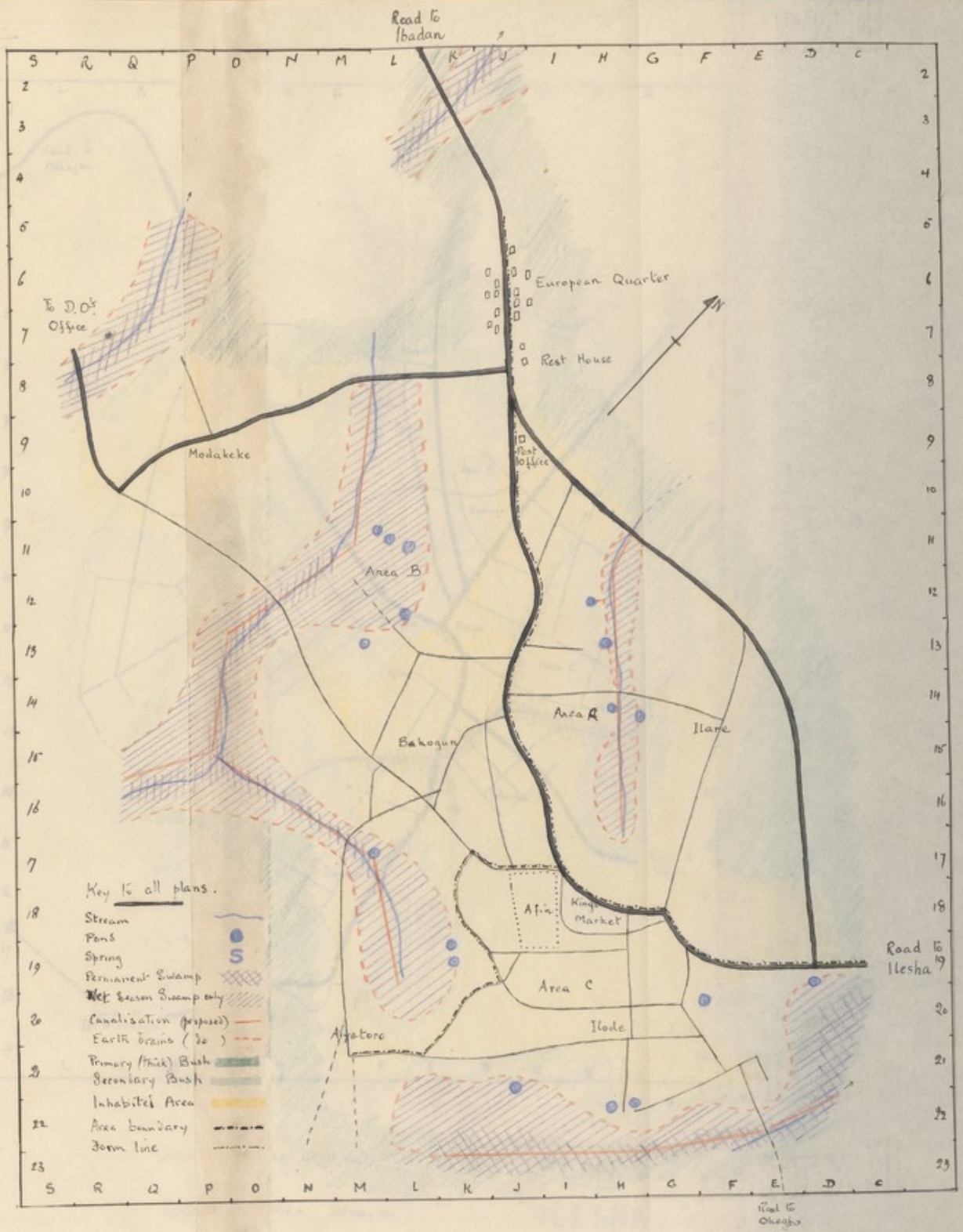
GRAPH II

ABEOKUTA.

S R Q P
A
To D.O's Office
Modake
Road to Akure & Benin
Road to Warra
Key to all plans.
Stream
Pond
Spring
Permanent Swamp
Seasonal Swamp only
Canalisation (proposed)
Earth drains (do)
Primary (thick) Bush
Secondary Bush
Inhabited Area
Area boundary
Farm line

GRAPH II

ABEOKUTA.

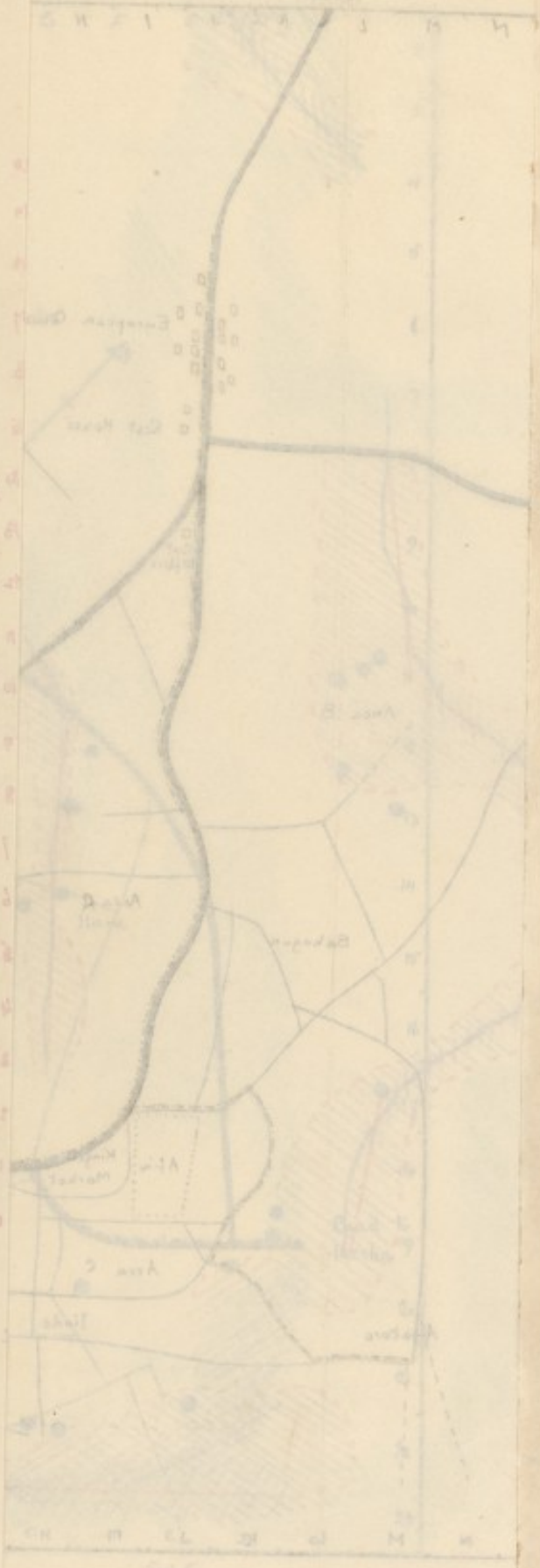


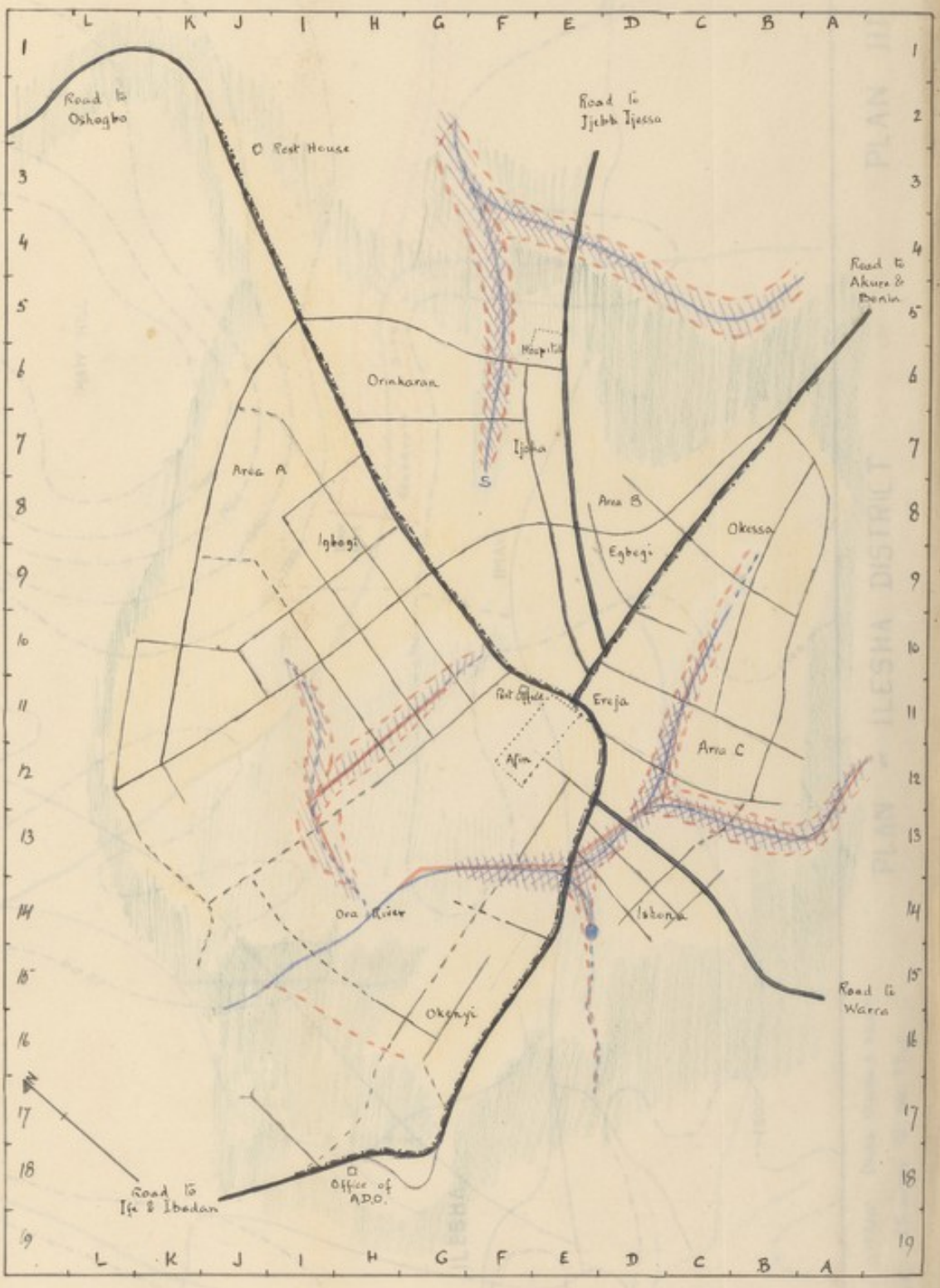
Scale :- 5 inches to the mile.

Modified from P.W.D. Plan No. 2432 of 27/2/29.

PLAN I

IFE



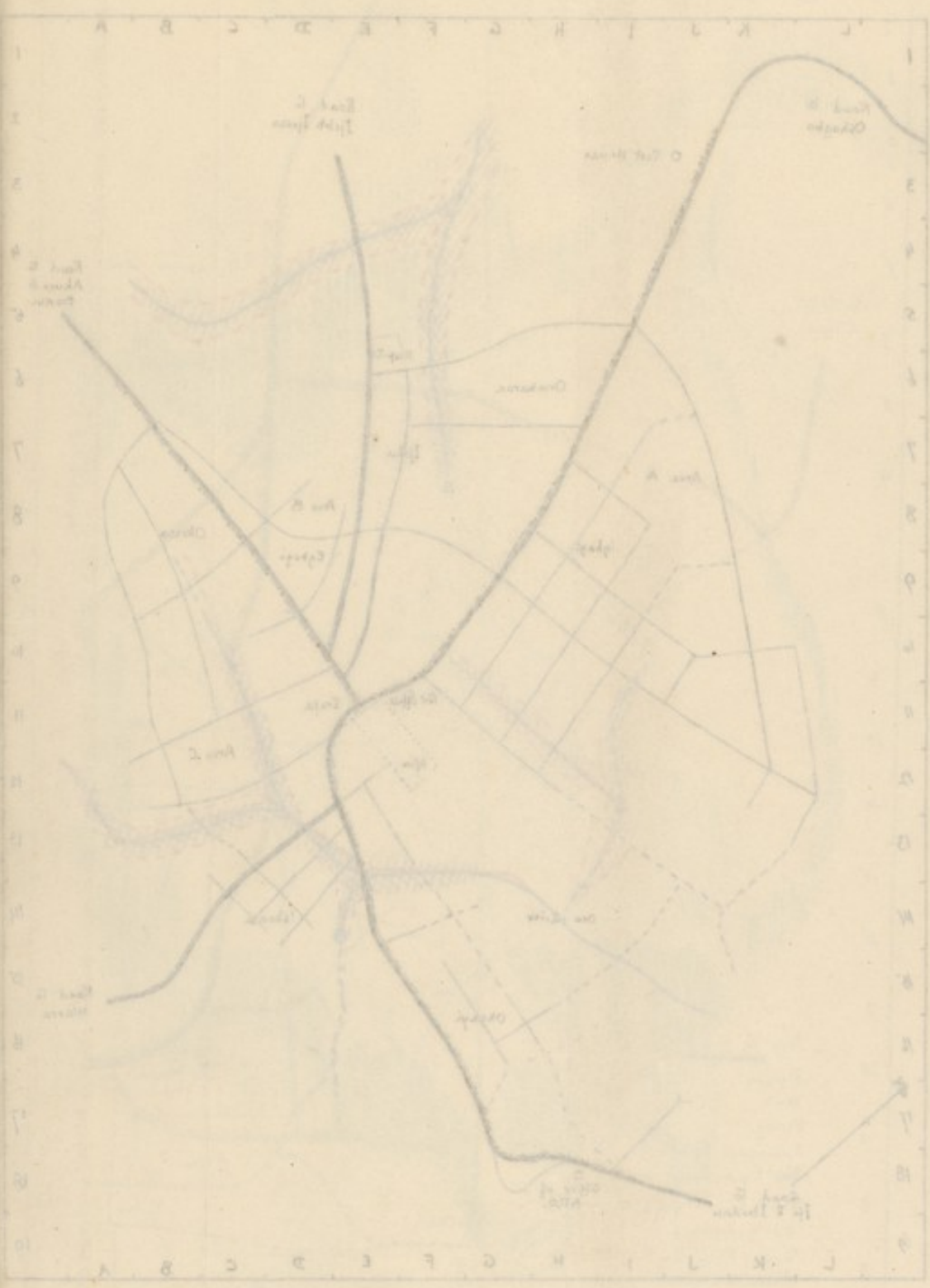


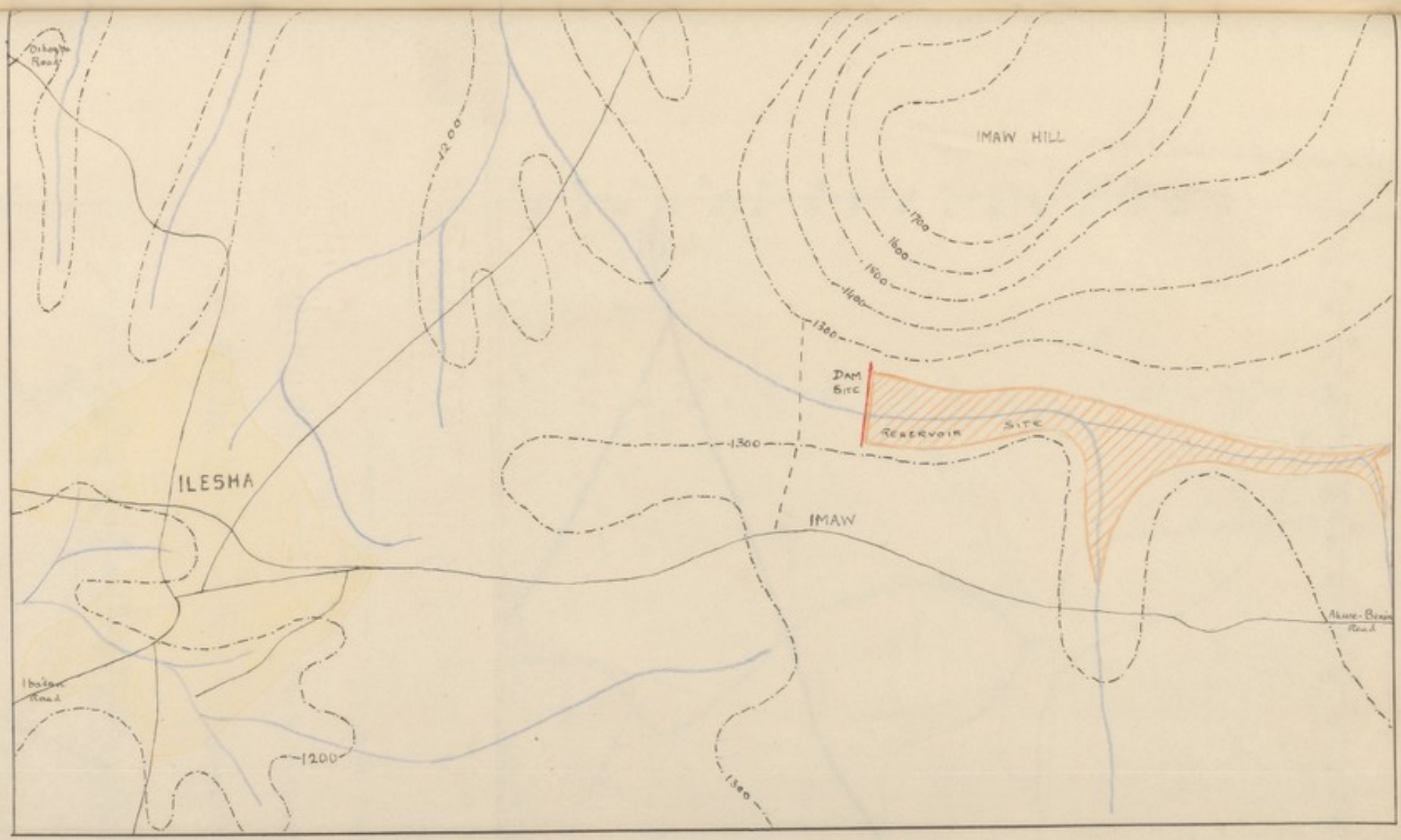
Scale 5 inches to 1 mile:

Ebenezer Ashcroft M.O.H. 21st May 1930.

PLAN II

ILESHA.





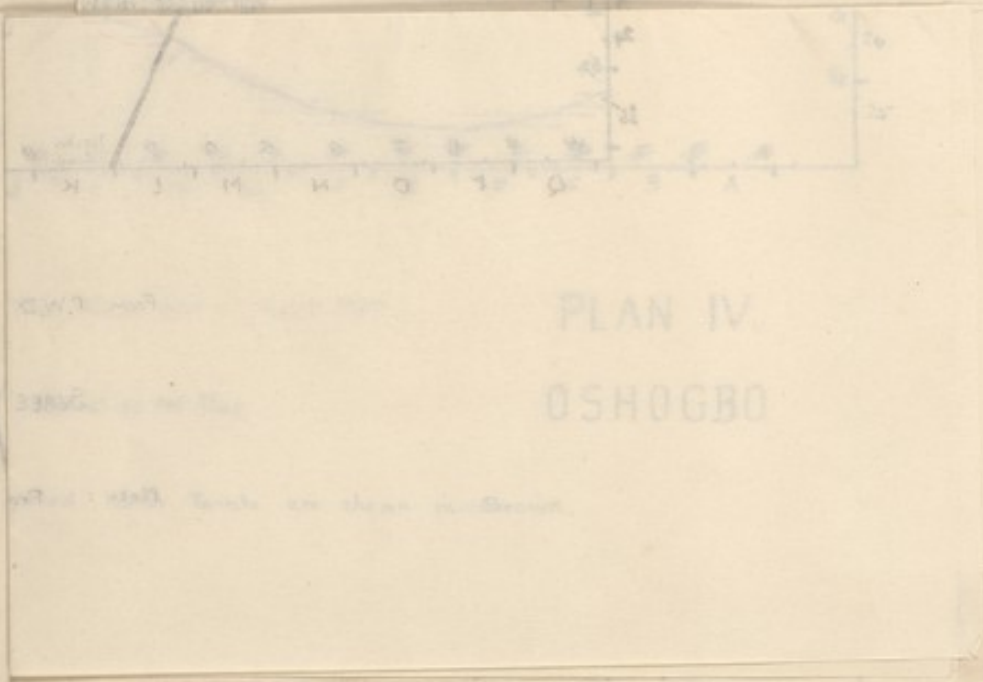
Modified from 1:125,000 Ilesha Standard Sheet.
SCALE: 2½ INCHES TO THE MILE.

PLAN OF ILESHA DISTRICT

PLAN III

PLAN III

PLAN OF IRSHA DISTRICT

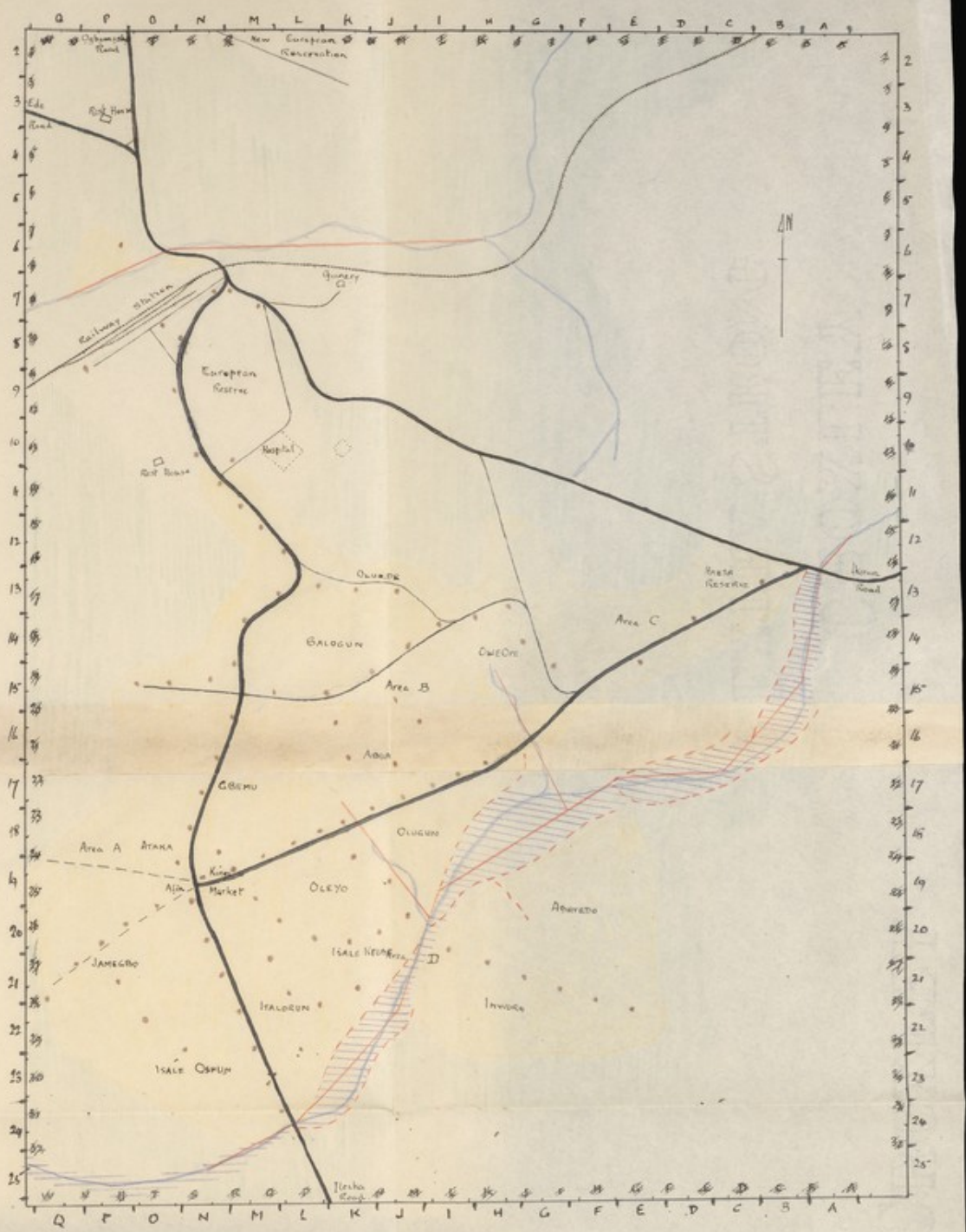


PLAN IV

OSHOGBO

PLAN III

PLAN OF IRSHA DISTRICT



From P.W.D. Plan H.Q. No 13161 of March 1930

PLAN IV

SCALE 5 INCHES TO THE MILE

OSHOGBO

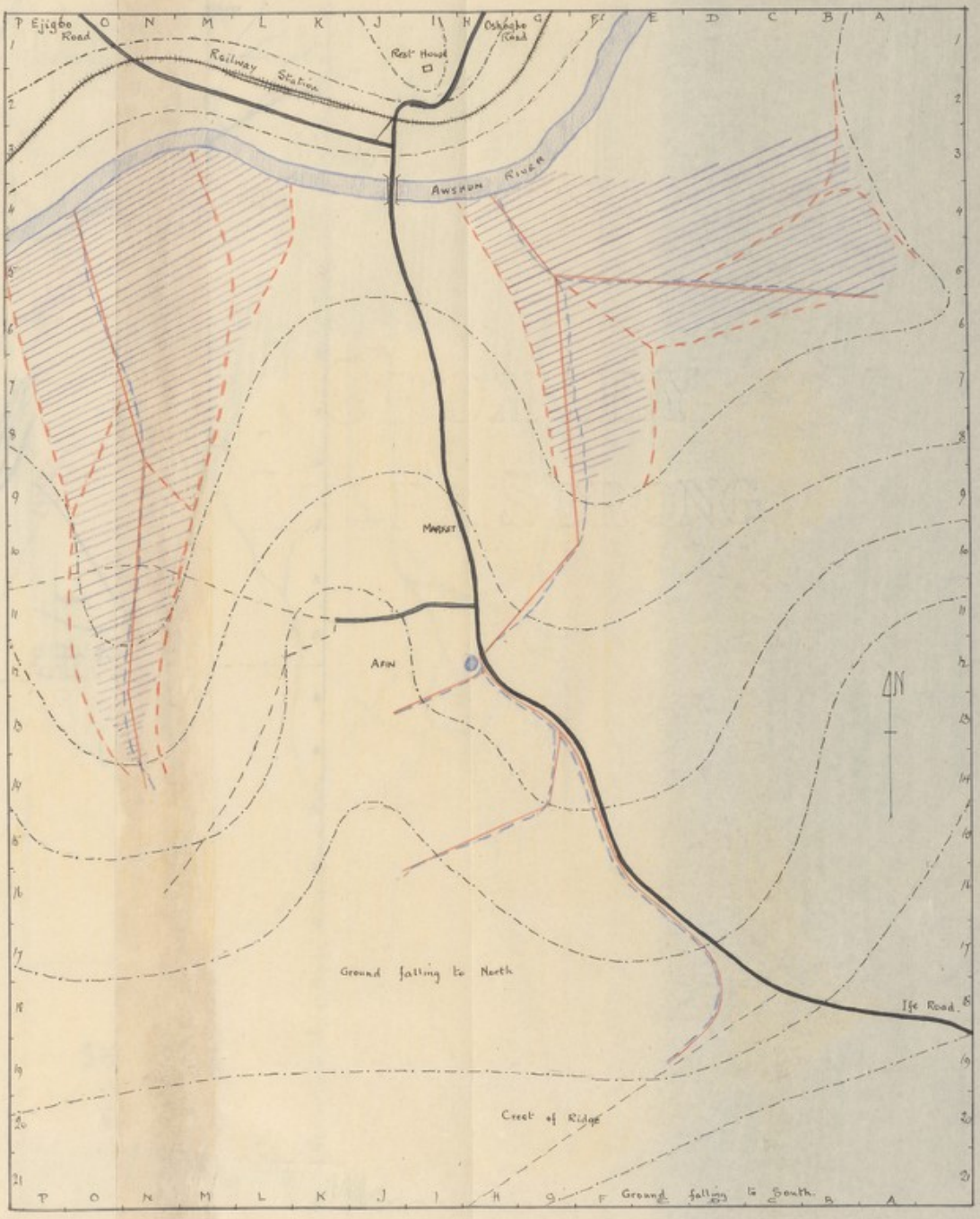
Note: Proposed Water Points are shown in Brown.

PLAN III

PLAN of IRISH DISTRICT

PLAN III

PLAN of IRISH DISTRICT



Scale : 5 inches to the mile.

Surveyed Awsum M.D.H. 27th May 1930.

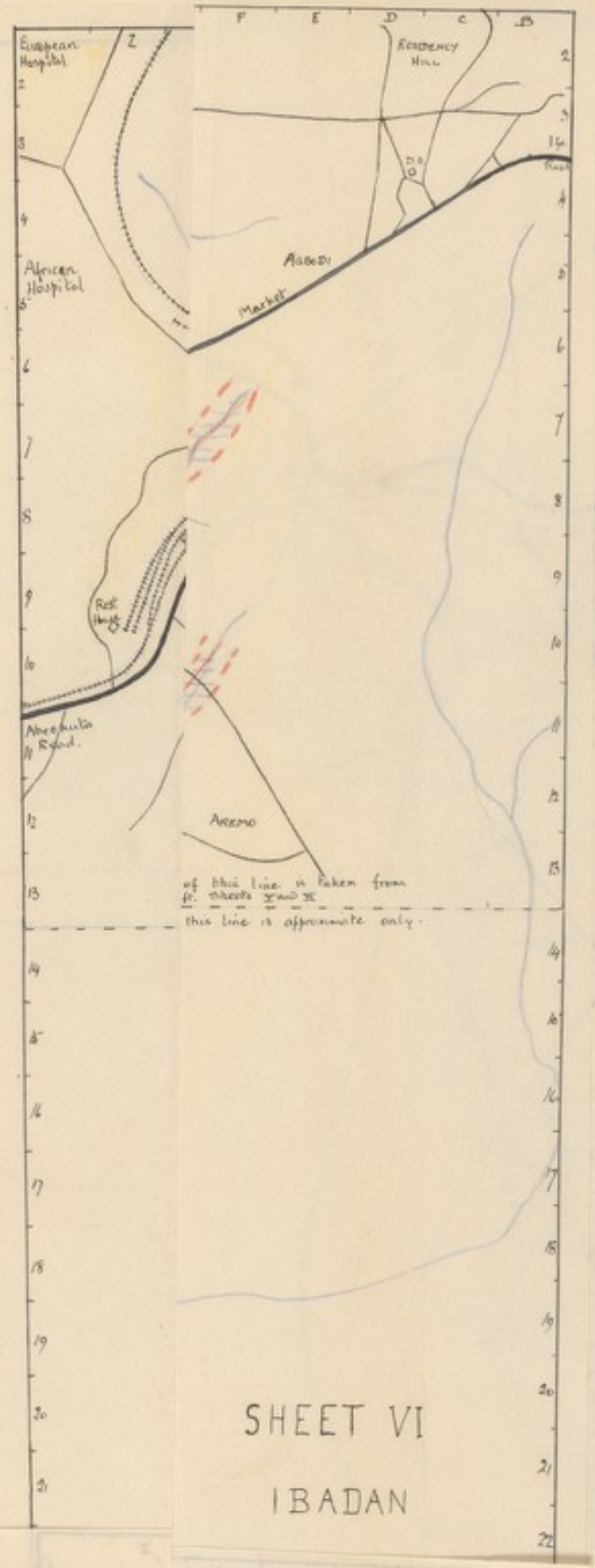
Form Lines are approximate only.

PLAN V

EDE:

PLAN III

PLAN of ILESHA DISTRICT



SHEET VI

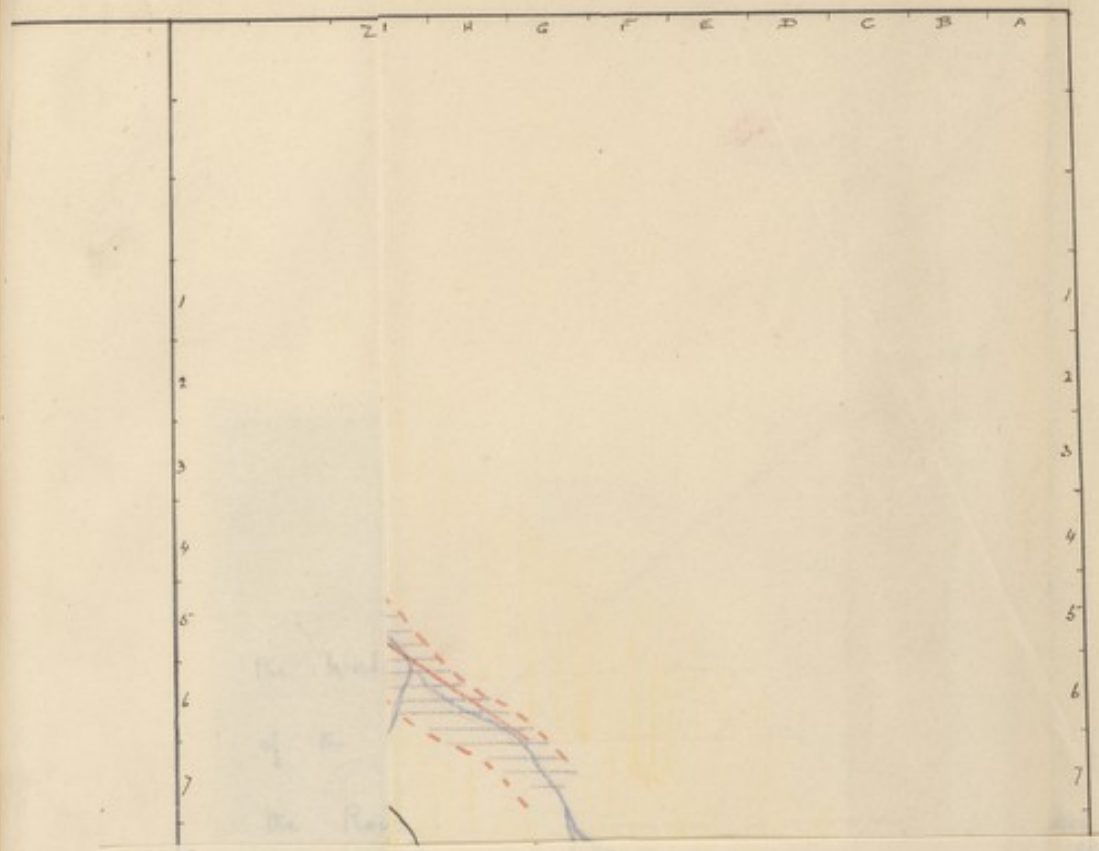
IBADAN

PLAN III

PLAN of ILESHA DISTRICT

European Hospital
African Hospital
Oja Road
Residency Hill
Market
Post Office
Town Hall Area
Railway Station
Prison
Abeokuta Road
Agodi
Agodi Market
Adodo
I.N.A. Hospital
Ode
Agbeni
Agbeni Market
Agbeni Mosque
Aleke
Aleke Market
Ajeromo
Ajeromo Market
Dugbeni
Council Hall
Mosque
Ayeye
Ogbere Stream
Ogbere River
Ogbere
Bunari
Bunari Market
Kuseti
Mosque
Ijebu Ode Road
Abeokuta Road
The area North of this line is taken from map sheets I and X
The area South of this line is approximate only.
SHEET VI
IBADAN
Scale : 5 inches to the mile.

PLAN of ILESHA DISTRICT


Z I H G F E D C B A
1
2
3
4
5
6
7

ARAN - LEASH DISTRICT

ARAN III

Pumping Station
Waterworks Reservoir
Market
Isabasoro
Ward X
Ward IX
Ward VIII
Ward VII
Ward VI
Ward V
Ward IV
Ward III
Ward II
Ward I
Isabasoro Market
Ibara Market
Apesan Market
Apesan
Asiwaju Road
Ibara
Ibara Market
Railway Station
Market
Ogun River
Slaughter Point
Lagos Road
Simpson Market
Simpson
Abeokuta General Hospital
Ward VIII
Ibara
Market
Residency Rd.
Police
O.D.O.
Onion Market
Railway Station
Lagos Road
Ibara Rd.
Ward V
Ward IV
Ward III
Ward II
Ward I
Z Y X W V U T S R Q P O N M L K J I H G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

The following photographs have been lent by the kindness of Dr. Henry Beeuwkes, Director of the West African Yellow Fever Commission of the Rockerfeller Foundation. Although not taken with the view to inclusion in this Report they illustrate many points referred to in it.

The following photographs have been lent by
the kindness of Dr. Henry Seaman, Director
of the West African Yellow Fever Commission of
the Rockefeller Foundation. Although not taken
with the view to inclusion in this Report
they illustrate many points referred to in it.

A. Conditions under which food is sold.

Cassava flour on mats on the ground.

B. Food vendors in one of the market pathways. They have got up because of the camera. Generally they squat on the ground behind their baskets.

B. Food vendors in one of the market
pathways. They have set up because of
the camera. Generally they squat on the
ground having their baskets.

C. The leaking type of tap on the standpipes in Ibadan and Abeokuta. Note the concrete surround which drains no where with the result that it is approached through permenent mud puddles.

D. Two essentials of domestic life in Yoruba land: pots broken and otherwise, and goats.

E. Canoes in which rain water collects and when they leak, river water also. They form a prolific breeding ground for mosquitoes on the Ọṣhun River at Oshogbo.

F. Crab holes in tree roots on the banks of the Oshun river. The homes of a Yellow Fever vector.

G. Swamp pond along one of the water courses in Ife. A. gambiae breed freely.

F. Wet season conditions in the neighbourhood of Abeokuta. Another paradise for A. gambiae.

G. A bamboo pond in Ilesha, breeding, A. gambiae.

H.W. Compound Inspection. Taking the pot - larval index.

1. The rocky formation of Abeokuta.

REPORT
on
SANITARY
CONDITIONS.