

Leprosy in the Gold Coast.

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DURING the last three years leprosy work in the Gold Coast has been proceeding along the following lines :—

- (a) A leprosy survey of the Colony.
 - (b) The formation of leprosy out-patient clinics at stations where medical officers are resident.
 - (c) Propaganda in regard to leprosy work.
 - (d) Clinical and laboratory investigations on cases in the existing settlements.
- (a) As the results of this survey are of great interest, I propose to give a résumé of the findings.

The largest number of cases have been noted in Ashanti and the Northern Territories ; fewer cases have been seen in the Eastern Province and in Togoland, and fewer still in the Central and Western Provinces.

Eastern Province.

In Accra, the Contagious Diseases Hospital is used as a Leprosy Settlement, and accommodates 42 cases. In other districts with the exception of the Kwaha district, few cases came forward through the circularisation of the Chiefs, the majority having been seen by medical officers during their work and treated as out-patients.

At Mpraeso the Omanhene rendered assistance and over 174 cases have been seen ; between 50 and 100 of these attend fairly regularly for treatment. If a central settlement is agreed upon at Kumasi, it is thought that those cases living at a distance from Mpraeso might agree to go there, rather than have a local settlement.

Central Province.

With the exception of the Saltpond district, the circularisation of the Chiefs proved futile. In the Saltpond district, 33 cases came forward, but none of these cases, in spite of free treatment, have come forward for treatment. In the Cape Coast district, 40 cases were seen during the investigations in 1928 ; of these, only one has persevered with treatment. At Oda, the medical officer found several cases which were attending for treatment fairly regularly.

Western Province.

Few cases have been noted in this Province, except at Axim, where 90 cases have been seen. The attendances, are,

however, very irregular, owing to the distance to be traversed to the clinic. A settlement is desired chiefly by people not affected by the disease ; its formation would be a complicated matter, owing to the need for the co-operation of the seven Amanhene in the district.

Ashanti.

In Ashanti a large number of cases have been seen, especially around Kumasi and the Kokofu division of the Bekwai district which borders Lake Bozumtwi ; 735 cases have been seen in this area, of which 774 are undergoing treatment. At Kumasi Contagious Diseases Hospital, 378 cases are at present undergoing treatment ; at Bekwai, attendances are unfortunately irregular, owing to the distance to the clinic, and a settlement is favoured.

At Kintampo, over 200 cases have been seen. Attendances are, however, not very regular, and a settlement is recommended by the medical officer, as the only method of dealing with this problem successfully.

At Sunyani, attendances are poor, as the travelling in the district has been much curtailed.

At Obuasi, 36 cases are attending treatment fairly regularly.

The question of a settlement for all these cases has been suggested. The late Senior Health Officer at Kumasi was in favour of a large settlement at Kumasi to serve the whole of Ashanti. If, however, this would be out of the question at present, owing to financial stringency, the present arrangement at the Kumasi Contagious Diseases Hospital, together with a smaller scheme at Kokofu carried out with the assistance of the Omanhene and run by the medical officer from Bekwai might be possible. There can be no doubt that owing to the nature of the Kokofu division and its distance from Bekwai attendances cannot but be poor. This case, therefore, demands some kind of settlement, especially as this division appears to have one of the highest leprosy rates in the world.

Northern Territories.

In the Northern Territories, and particularly in the Northern Province, where the population is dense, the water supply is a difficulty in the dry season, shortages of food occur, and sanitation is absent, leprosy is very prevalent. The number of cases seen is large, and many more would appear were there a larger medical staff to see and treat the cases.

The White Fathers at Navrongo received a grant from the British Empire Leprosy Relief Association in 1929, towards building and equipment. Another Sister has just arrived to assist with the treatment. Work started in September. Many cases have been seen in the district, but owing to the distance to be covered to the centre there are as yet but few in regular attendance. A village settlement has been suggested and political assistance promised in its construction.

In the Lawra Tuma and Wa districts, 630 cases have been seen; owing to the distance to be covered in order to reach the only two medical officers in this area, very few of these cases are attending for treatment.

At Tamale, 520 cases have been seen, and the majority of those from villages near Tamale are attending regularly. Those at a distance from Tamale are also attending, but irregularly. A village settlement has been proposed for these cases, and would undoubtedly be a success if commenced immediately; otherwise, with the prolonged treatment required and the distance to be covered to the Tamale clinic, numbers may commence to drop and a great opportunity to consolidate leprosy work in Tamale will have passed.

Togoland.

In Southern Togoland, owing to the Ho settlement, cases are now coming forward for treatment in the earlier stages of the disease, and are prepared to stay a considerable period in order to get rid of the disease, or ameliorate their condition; the work is becoming well established. In the Kete, Krachi and Yendi districts conditions are more primitive and work is a more difficult problem in regard to leprosy.

Some of the main difficulties which are met with in leprosy work are:—

- (a) The type of leprosy.
- (b) The apathy of the people.
- (c) The slow progress of treatment.
- (d) The paucity of medical officers.

(a) The anæsthetic (nerve) type of leprosy appears to be the predominant type throughout the colony. Nodular leprosy, which is so repulsive, is less common. (The "A" type case is more common than the "B" type case, according to Muir's classification. From figures to hand the percentage of anæsthetic cases varies in different parts of the colony from between 81 per cent. and 66 per cent. of the total number of cases seen. This experience is similar to experience in Southern Nigeria, the Congo and South Africa, and is

undoubtedly a stumbling block in carrying out leprosy work, as it has been argued "that this type of leprosy is not a virulent type, it has existed from time immemorial, and only a small percentage of those infected develop the disfiguration and deformities seen in the later stages of the disease."

(b) Sufferers in many parts of the country, especially in the Northern Province of the Northern territories, are well tolerated by their fellows, eating and drinking out of the same utensils as healthy persons, sleeping in the same room and even in the same bed, or mat. In some places more precautions are taken after the death of a patient to avoid the disease than were ever thought of during his life time. The natives can usually recognise leprosy even in its early stages and appreciate its infective nature; most of them dread the disease, and few will admit that their parents have suffered from leprosy, though in many cases it is undoubtedly a fact. In many parts of the country there are various native customs, the object of which is to segregate the sufferer or cast him out, but on closer investigation in most parts of the colony, little notice appears to be taken of these customs, and nothing appears to be done to arrest the spread of the disease. In certain districts near the coast the fear of leprosy is greater and the sufferer is sometimes segregated on a farm in a hut.

(c) The treatment of leprosy is not so spectacular as the treatment of yaws, where immediate and visible results are often observed. Often cases are disheartened by their slow progress, and discontinue treatment.

(d) Medical officers are few and far between. Distances to treatment centres are often great, and may perhaps be in a district where both languages and people are foreign to the patient, so that unless accommodation can be obtained close to the treatment centre and maintenance of some sort provided, the patient is unable to prolong his stay sufficiently to have the necessary treatment.

There is no doubt that these difficulties are gradually being overcome in many parts of the colony by out-patient clinics, settlements and propaganda. The value of treatment is being slowly realised, and efforts are being made to find accommodation for cases that are prepared to stay.

The cases at the Contagious Diseases Hospital, Accra, were examined last year (1930) and this year (1931) I have been able, with the kind help of the Medical Research Institute, to carry out further examinations on the cases at Ho, while stationed there as medical officer. The aim in making these investigations has been to study the symptoms

and signs of the disease, to note the common concomitant infections in this district, and also the results of treatment.

Observations at Ho Leprosy Settlement, Togoland.

There are 515 cases in the Ho settlement, the majority of whom come from this district.

The Ho district comprises the southern section of British Togoland. The southern part of the district consists of savannah country, and the northern part forest country of a hilly nature. 776 cases have been seen and examined, giving a leprosy incidence of over seven per mille. The greater number of these cases have been seen at Ho, or are at present at Ho, in the settlement. There appears to be little if any difference in the leprosy incidence in the savannah part as opposed to the forest part of the district.

Certain points of interest have been noted while making notes on the cases in the settlement. It must, however, be remembered that it is often difficult to get accurate information from primitive people in regard to the length of time that they have had the disease, any prodromata they may have noticed, &c. In making the following observations, use has only been made of the case cards of those patients who appeared to understand the questions asked and to give intelligent replies—about 70 per cent. of the total number.

Sex and Age Incidence.

There are in the settlement 310 males and 205 females. The number of males in the district closely coincides with the number of females. There is, therefore, a large preponderance of males over females suffering from the disease.

The age of onset in the various age periods expressed in percentages is as follows :—

Age	1-10	11-20	21-30	31-40	41-50	Over 50
Males ...	8	21	35	27	8	1
Females	12	21	31	27	8	1

In over 50 per cent. of cases was leprosy first noted between 10 and 30, and in over 75 per cent. between 10 and 40. This is similar to observations in other parts of West Africa.

Occupation.

The chief industry of the district is farming. Farmers are, therefore, in a majority. There does not appear to be any marked increase in the leprosy incidence in any particular trade in the district.

Type of Leprosy.

The classification of these cases has been carried out

according to the method recommended by Muir, which with slight modifications appears to have been adopted in the recent International Congress on Leprosy in the Philippine Islands. The "A" type of case, being those in which no bacilli can be demonstrated, are diagnosed clinically by nerve signs, while "B" cases are those in which bacilli can be demonstrated, in the skin lesions. The "B" type embraces all cases of nodular leprosy, and mixed types, as in these mixed cases bacilli are demonstrable.

The "A2" type consists of cases in the late anæsthetic stage of the disease, in which late nerve manifestations, such as acroteric anæsthesia and trophic signs are to be found.

The cases at Ho may be classified as follows :—

	<i>Purely anæsthetic (A1 and A2 type).</i>	<i>Nodular and Mixed. (B types)</i>
Males ...	66%	34%
Females ...	70%	30%

The anæsthetic cases consist of the following percentages of early anæsthetic (A1) and late anæsthetic cases (A2):—

	<i>Early anæsthetic.</i>	<i>Late anæsthetic.</i>
Males ...	57%	43%
Females ...	61%	39%

A hopeful sign is that the number of cases coming in in the early anæsthetic stage of the disease is on the increase.

Duration of the Disease.

The average duration of the disease in the males and females in the various stages of the disease was as follows :—

	<i>Males.</i>	<i>Females.</i>
Early anæsthetic ...	4.9 years	5.9 years
Nodular and mixed ...	5.7 years	6.2 years
Late anæsthetic ...	10.6 years	10.4 years

This table merely expresses averages. In the table of type of the disease it will have been noticed that less than one-third of the patients are nodular, and have passed through the nodular phase. There are, however, cases in the settlement that have remained in the early anæsthetic stage for 30 years or more, and also some cases that have shown late anæsthetic signs within a few months of onset. In regard to nodular cases, some cases commence as nodular leprosy without having ever shown anæsthetic signs, and have remained nodular for 30 years or more. From the above table there may be a slight tendency for a case to become nodular, if it is going to become nodular, between the fifth and tenth year of the disease.

It is difficult to understand why only about one-third of the total cases ever pass through a nodular phase. The disease may have been so long endemic in this area that there is a high degree of immunity in the native population. A full investigation was carried out in Accra on 40 patients in 1929 to see if there were any marked concomitant infections in nodular cases lowering the vitality and the resistance of the patient in nodular cases, as opposed to anæsthetic cases, but no conclusion could be arrived at.

Prodromata.

In the majority of cases (70 per cent.) it seemed that the patient failed to notice any prodromata before the onset of the initial lesion. In 30 per cent. of the cases certain prodromata were noticed before any sign of a lesion. These symptoms were in order of frequency, pain, fever, paræsthesia, headache, weakness and prickly sensations under the skin. In a few cases the initial lesion was first noticed on the site of an old ulcer or lesion of crab yaws.

Initial Lesion.

The commonest types of initial lesion appear to be :—

(a) A pale copper coloured macule, which slowly enlarges, in the skin. Anæsthesia to light touch can sometimes be demonstrated in it. There is also often a loss of the sense of heat and cold. The colour is due to partial loss of pigment. It is the commonest initial lesion.

(b) A raised discoloured patch in which bacilli can often be demonstrated.

(c) A marked acroteric anæsthesia of a hand or foot. This is rare.

(d) An atrophy of a group of muscles in the hand or foot causing drop wrist and drop foot. Only two cases of this type were seen.

The types (c) and (d) are instances of cases where nothing has been noted by the patient until there has been marked nerve involvement.

Sometimes in the routine medical examination of patients in general medical work, one observes small depigmented patches of leprosy in which it is often possible to demonstrate anæsthesia to light touch or heat and cold. On enquiry it is often found that the patient has had the disease for years and has never bothered about treatment as the disease has not progressed.

In other cases leprotic lesions are seen which have been submitted to native medicines and various devices, such as

scarification and rubbing in gunpowder in order to camouflage all signs of the disease. The usual preparation seems to be some kind of vegetable dye. Keloids sometimes result from the gunpowder treatment. A few cases appear to have been deliberately burnt with a hot iron, and the leprosy can be seen extending from all round the edges of the resulting scar.

The Site of the Initial Lesion.

This is sometimes of interest. In this district the cheeks and forehead, the back, the buttocks and extensor surfaces are common sites for the initial lesion. Initial lesions on the feet are not common. No initial lesions were noted on the scalp. The native dress of the district consists of a cover cloth loosely draped about the body. This is tied around the waist while at work, and at night they lie on mats completely enshrouded in mats. The women wear a loose bodice and a cloth draped round the lower part of the body, reaching almost to the feet. From the common sites of the initial lesion infection would appear to be most often from contact with infected clothing or from lying on an infected mat. The common sites for the initial lesion do show some variation in different parts of the Colony. Around Lake Bosumtwi, in Ashanti, where crab yaws is very prevalent, the site of the initial lesion is often noted round these lesions. In the Northern Territories, especially in the Northern Province, where water shortages occur very often during the dry season, and *craw-craw* is very prevalent, there appears to be frequently a co-relation between the sites commonly affected by *craw-craw*, and thus frequently scratched, and the initial lesions of leprosy. The natives notice this fact themselves.

Nasal Smears.

These smears are made by rubbing the nasal septum with a sterile platinum loop and rubbing it on a slide, and afterwards staining by Ziehl Neilsen's method.

As a result of this test it was found that 35 males and five females who appeared from the physical signs to be purely anæsthetic or "A" cases, were found to be "B" cases in which bacilli were demonstrable, which showed an error in the clinical diagnosis of 11 per cent. in the males and 2 per cent. in the females. In 86 per cent. of the nodular cases could bacilli be found in the nasal smears, and in the remaining 14 per cent. bacilli could be found in the lesions.

The nodular and mixed types "B" are, therefore, the chief source of infection.

Thickening of the Superficial Nerves.

This was noted in 15 per cent. of cases ; the ulnar and the superficial nerves are usually the nerves involved.

Concomitant Infections.

It is an essential part of leprosy treatment to search for concomitant infections which may be lowering the vitality of the patient and nullifying the effect of treatment.

In every case, thick blood films were taken and examined for microfilaria and malaria. The films were taken between 10 a.m. and noon. A single drop of blood examination gives a rather low indication of the numbers infected. To obtain accurate figures repeated examinations during the day are necessary. The results showed that 23 per cent. of the inmates of the Leprosy Settlement harboured microfilaria loa loa. A control was done by examining 100 out-patients seen on trek throughout the district, the films also being taken between 10 a.m. and noon. Of these, 17 per cent. showed the presence of microfilaria loa loa. None of the patients complained of Calabar swellings, though I have once or twice seen symptoms suggestive of Calabar swellings in hospital out-patients.

The number of cases suffering from filarial or malarial infection is not proportionately greater in the nodular and mixed cases. It can not, therefore, be said that the vitality of these cases is lowered more than the anæsthetic cases by this infection.

The examination of the stools has not yet been completed. The commonest helminthic infections in this district appear to be ascaris, trichuris, strongyloides and ankylostome infections. Tape worms are sometimes seen. In hospital practice helminthic infections, with the exception of ascaria and oxyuris infections, are not a frequent cause of complaint by the patient.

It has not been possible to complete taking the Wassermann reaction of all the cases, owing to transport difficulties, and the fact that only a small number can be taken each week. For despatch the serum is separated off and pippered into small ampoules into which has been put a very small amount of boracic acid, as recommended by Butler. These ampoules are sealed and posted to Accra. The serum appears to keep well and very few have arrived in Accra contaminated or spoilt.

It has been claimed that a positive Wassermann reaction is apt to occur in cases of nodular leprosy when there is no yaws or syphilis present. This is, however, not thought to

occur if Kolmer's new method of carrying out the Wassermann reaction is adopted.

Of 108 Wassermans done to date, 56 have been positive, giving a percentage of 52 per cent. This is high, but it must be borne in mind that yaws is very prevalent throughout the district.

The results were as follows among the cases :—

Early anæsthetic	...	...	...	23
Nodular and mixed	...	...	...	17
Late anæsthetic	...	...	...	16

All the cases were males.

There is not a marked difference between the rates for the anæsthetic and nodular cases.

Complications.—Ulcers.

There are patients with ulcers, the majority being trophic ulcers, some, however, being broken down nodules.

Eye lesions are not uncommon in nodular cases, and are usually of the nature of an irido-cyclitis.

Treatment.

During observations over a period of ten months, the following results have been noted at Ho :—

Greatly improved	...	...	...	...	119
Improving	...	...	...	...	295
Slight improvement	...	...	...	...	47
Stationary	...	...	...	...	25
Worse	...	...	...	...	29

During the year, 23 patients were discharged as clinically and bacteriologically free of the disease, and have to report at six monthly intervals.

Any concomitant infection found is treated. For cases with yaws or with a positive Wasserman, a course of N.A.B. or Sorbita is given.

Leprosy treatment consists in the bi-weekly subcutaneous injection of "Alepol," and the external application of trichloroacetic acid in varying strengths to the skin lesions. Potassium iodide is now only used in specially selected early cases.

Moogrol, which is a more irritating injection, and expensive form of treatment, is preferred by many of the patients, although results from its use do not appear more satisfactory than results obtained from Alepol. Doubtless there is in the primitive mind an idea that the more painful an injection is, the more efficacious it will be.

In the treatment of ulcers, hot permanganate baths

are useful in sloughing cases, and eucalyptus oil and iodoform have been found useful for granulating surfaces. Trophic ulcers sometimes require to be scraped.

In 20 cases, Ideal Milk injections have been employed. Smart reactions occur which are difficult to control. The results have not been altogether satisfactory.

Work is an essential and all cases that are not suffering from the effects of a reaction should be turned on to some kind of task for at least an hour a day. One is continually struck by the fact that the industrious patients seem to improve very much more rapidly than those that sit down all day, doing nothing. All are encouraged to work, and have small farms. I do not believe that there is any danger of a native African working too hard for his strength, even in a leprosy settlement. I have never seen any ill results from work.

There is no doubt that the disease goes in cycles of remissions and exacerbations, whether it is being treated or not, and it is important to stop treatment when there are signs of acute exacerbation or reaction, otherwise the disease may be aggravated.

Summary.

1.—Leprosy is prevalent throughout the Gold Coast and British Togoland.

2.—Among the chief difficulties to contend with are :—

(a) The apathy of the people in many parts of the country.

(b) The slow and non-spectacular results of treatment.

(c) The anæsthetic type of leprosy predominates, and may partly account for this apathy.

(d) The paucity of medical officers and the distances to treatment centres for many of the patients.

3.—The average case of leprosy appears to go slowly from the early anæsthetic stage into the late anæsthetic stage. Few show nodular symptoms.

4.—Prodromata appear to be often unnoticed before the onset of the initial lesion in the Ho district.

5.—The common concomitant infections in the Ho district are given.

6.—Out-patient clinics have been found useful, and settlements for cases living at a distance from treatment centres.

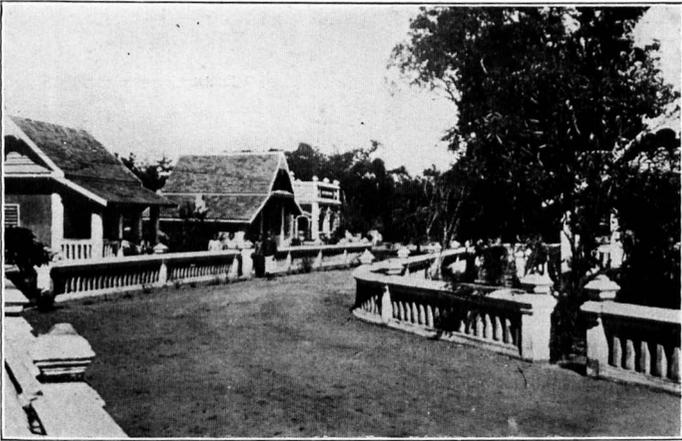
7.—The results of treatment are given, and important points mentioned.



SKETCH MAP OF THE GOLD COAST SHOWING MAIN TREATMENT CENTRES (1931).



GENERAL VIEW OF WARDS. CHIENGMAI LEPROSY COLONY
(SIAM). NOTE WARD IBROW ON THE LEFT.



VIEW OF THE MEN'S COTTAGES. CHIENGMAI LEPROSY
COLONY.

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