in my opinion a reasonable theory to account for the apparent immunity or rarity of cancer of the breast amongst the native women of British Central Africa. The presence and apparently increasing prevalence of this disease amongst the civilized native women descendants of the liberated African in Sierra Leone must point out that we must look for some other means brought about by their contact with and embracing of civilization.

The important fact of hereditary predisposition has not been lost sight of, but so far I have been unable to trace the existence of any growth whatever in their family history of the majority of the cases examined. In one case, however, there was distinct hereditary origin, for which I can vouch, as I treated the grandmother for cystic adeno-sarcoma of the right breast, the granddaughter for carcinoma of the uterus, and the great-granddaughter for recurrent adeno-sarcoma of the groin.

It may be interesting, as bearing upon the question of civilization as a contributory cause to the origin and spread of cancer and other diseases among aboriginal population, to compare the history of two African peoples on the West Coast of Africa—the Sierra Leone creoles and the Fantis or natives of the Gold Coast.

In the case of the Sierra Leone creole, his ancestors of various tribes and languages, different habits and social customs, and of various temperaments, dispositions, and idiosyncrasies, had, as an outcome of the suppression of the slave trade and slavery, been brought and located in Sierra Leone. Possessing nothing of the elements of a nation in common, they could not combine and unite and so become a distinct entity and evolve, if not a language, a common social custom and mode of living best suited to their state and condition as children of the tropics. Their eagerness in their ignorance to forsake their own native social customs and to embrace and adopt the language, dress, and mode of living of their benefactors—an eagerness largely born of gratitude—was only paralleled by the earnest solicitude on the part of their benefactors to help them to throw off what was "native," and which was unwisely regarded by the latter as relics of barbarism and heathenism, and assist them in the adoption of their language, customs, and mode of living. As ignorance and tribal differences slowly gave way to education and inter-marriages, the tendency not to assimilate what was best in their native brethren or to unite, but to imitate, adopt, and practise what was foreign, grew and grew until, by the process of evolution, the Sierra Leonean had become more English than any other people on the West Coast of Africa. The initial cause of this was the absence of a common nationality, tribal origin, or clan ship; for how different would the creoles have been if their forefathers were all from the same country and of the same tribe! They would have preserved their language, traditions, customs, and habits, and have been better able to resist, for a considerable period at least, the inroads of certain civilized habits and influences, the adoption of which has proved detrimental to their very existence.

Now let me take the case of the Gold Coast, and see how far European civilization has affected a large majority of the people there who are one in language, habits and customs. These people have been in contact with European nations for five centuries. Their country was visited by the Phoenicians; they have had at various periods and for more or less long duration constant intercourse with the Danes, Dutch, Portuguese, Germans and English, who have at intervals and in succession held and fortified their coast towns. Yet after so many centuries of close contact with Europeans, they have by virtue of their race instinct and race unity resisted as one people the inroads of European civilization into their social life, and as a result we find the absence or rather rarity of cancer and other new growths amongst them. How long this condition will last remains to be seen. Native customs die hard, but with the establishment of permanent peace in their country, the opening of their country by railways, the constant influx in increasing numbers of Europeans exploiting the country and working the mines, the equally rapid increasing number of the offspring of such Europeans as a result of intercourse with the native coloured women, descendants of older decades from Danish, Dutch, German and English forefathers, and with the other non-hybrid native women, the liberal and progressive system of education now being established all over the country, I am very much afraid

that the social habits and native customs of the Gold Coast people will before long disappear before the mighty onslaughts of European civilization, and with such disappearance arise those conditions which I believe, as the outcome of this civilization, are the origin of cancer. I entertain this apprehension also in regard to the Nigerias and other native territories which are being exploited by or made as a home for the white man.

I have in the above sketch attempted simply to give facts, and state my impressions based on those facts. I have refrained from making definite conclusions or positive statements, and necessarily so where the field of investigation is so wide and my opportunities for making researches are so limited. If, however, this sketch should serve to induce others to collect data and prosecute researches as opportunity offers so that definite conclusions may be arrived at, and should lead the creoles to reflect and alter their present mode of living so as to avert becoming the victims of this dire disease which up to the present baffles medical science, I shall not have made the attempt in vain.

ONE CAUSE OF CANCER AS ILLUSTRATED BY EPITHELIOMA IN KASHMIR.*

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DURING twenty-five years, of 4,902 tumours removed by operation in the Kashmir Mission Hospital, no less than 1,720 were malignant, and of these 1,189 were epitheliomata, and 848 were on the thighs or abdomen and were due to the irritation of the kangri, a portable fire basket, carried by the people under their clothes (Fig. 1). When sitting down this rests against the inner sides of the thighs or the front of the abdomen. The front of the chest, the breasts and the calves of the legs are all exposed to the irritation of heat, and they also are liable to become the seats of epitheliomatous disease, although much less frequently than the thighs and abdomen. The disease is twice as common in men as in women. The average age of the patients was as high as 55. Epithelioma is extremely rare under 40.

PRE-EPITHELIOMATOUS CONDITIONS.

Scars from previous burns are often the starting-point for epitheliomata. Many of the patients show a strong tendency to proliferating epithelium, and on the abdomen and thighs it is extremely common to find dry scaly pigmented spots or patches slightly raised from the surface. The skin is often mottled and shows the lines of distribution of superficial veins. This is due to overlying pigmentation deposited as the result of the irritation and dilatation of the veins caused by heat. Horny tumours are not rare and sometimes at their base transition into epithelioma can be demonstrated. There is also a condition allied to chronic eczema in which there is redness and a tendency to desquamation. This gradually shades off into the actual formation of scar tissue. When epitheliomatous changes are supervening, thickening is followed by raised patches like wheals. This may be followed by ulceration and gland infection.

CLINICAL PATHOLOGY.

There are three types of kangri burn epithelioma—the raised, the excavated, and the mixed. In the raised type there is usually ulceration, and often fungation and cauliflower excrescence (Fig. 2). Two inches in diameter is a common measurement. In the excavated type the floor is irregular and the edges undermined. In the mixed form the growth as a whole is raised, and circular or oval, and in the centre is a deep crater-like depression. Sometimes one portion of the growth is fungating and another portion excavated. All these growths are very septic, and the skin around is sodden with fetid discharge, which dries and forms crusts on and around the tumour. Ulceration and infiltration proceed, and muscles, peritoneum, and even the surface of ribs may be attacked. Glands are slow to show signs of infection. In the thigh they are usually involved in the following order: along the upper part of the internal saphenous vein, deep in Scarpa's triangle,

* Read before the Bombay Medical Congress.

close to the side of the pubis, transversely below Poupart's ligament, and, in advanced cases, the deep femoral and even the external iliac glands may be involved. In the abdomen, if the primary growth is above the umbilicus, both axillae may be affected—first, the anterior axillary glands, and later on the deep glands in front of and to the inner side of the vessels. Infected glands frequently attain the size of a pigeon's egg. They soften early. When they break down, diffuse infiltration may occur, and the overlying skin may become brawny. Eventually the skin gives way, and a deep ragged ulcer results, from which there is copious foul discharge (Fig. 3). The patient dies of exhaustion, septic intoxication or haemorrhage, from erosion into a large vessel.

On section the kangri burn cancer shows thickened edges and floor with translucent and opaque patches. The bulk of the tumour consists of mottled red and grey embryonic tissue with a scaffolding of fibrous tissue and numerous blood vessels.

Stiles's method is useful in demonstrating macroscopically the distribution of the infiltrating epithelium. Microscopically the growths are found to be typical squamous-celled epitheliomata, with abundant cell nests. The contents of the lymph glands in the later stages are soft grey and granular, like those of a dermoid cyst.

RESULTS OF TREATMENT.

By prompt and wide removal a radical cure can be attained in the majority of cases. Most careful examina-

should be seized with a volsellum and dissected out without handling. Portions of underlying muscle, and even of peritoneum, should be removed, if necessary. If the glands of groin or axilla have infiltrated the cellular tissue and the skin is brawny, they should not be touched.

Of the total number of cases, 6 died as the result of, or their deaths were hastened by, operation. Of these, 4 were

from prolonged suppuration in recurrent growths, 1 from peritonitis, and 1 was due to haemorrhage from ulceration into the femoral artery. But this is far from representing the mortality of the disease. Some cases are inoperable when first seen. Of 300 cases, the records of which I have examined, I find that there was known recurrence in 20. I should fear that there may be at least twice as many unknown to us and that the rate of recurrence may be as high as 20 per cent.

Compared with mammary carcinoma, the disease is superficial at first, and so the diagnosis is early. Superficial lymphatics are first

affected, which gives surgery a much better chance, and in the case of the thigh the glands of the groin are under observation and unlikely to escape detection. Consequently the disease is not nearly so malignant as scirrhus cancer.

Many causes have been assigned for cancer. It would appear that irritation, or excessive stimulation, is the most important of all. The effect of a sharp tooth on the tongue, of the chewing of betel in producing buccal cancer, and the application of caustics to warts in elderly people,

Fig. 1.

Fig. 2.—Kangri burn epithelioma. Raised type. Observe the scar tissue above and below, the mottling of the thigh and a dilated vein, and the scaly and pigmented condition of the calf.

tion of the groups of lymph glands is required, and they must be absolutely cleared out if any glands are enlarged. At the time of operation the glands must be dealt with first and the septic primary tumour last of all. Glands must not be torn, burst, or cut, and the primary growth

Fig. 3. Excavated secondary epithelioma of groin, with thin discharge from lower angle. The upper edge of the primary growth can be seen below.

is well known. In the kangri burn cancer we have a most important illustration of the result of irritation by heat. Year by year we have going on under observation the production of cancer by one particular cause. And we have every stage, from the earliest signs of epithelial

proliferation to the most advanced cancerous growths with secondary deposits. Kangri burn cancer is a local disease arising from a local cause, and that cause is, in my opinion, not a parasite, but the irritation of heat. Its local infectivity is no proof that it is parasitic. In Thiersch grafts, epithelium detached from one site grows readily in another. It is not difficult to conceive the possibility of a much greater degree of independent growth and reproduction of epithelium apart from a parasitic cause. This, I believe, we have in epithelioma. It is as if a mass of tissue had passed away from the control of some nerve influence, which under ordinary conditions counterbalances trophic action. A history of injury and the existence of cicatrices may point to the existence of embryonic tissue of repair, which when unduly stimulated by heat escapes the nerve control which inhibits undue growth. That in some cases the stimulant which starts epithelial overgrowth is brought by the circulation is shown by the influence of the internal secretion of the ovary on mammary cancer and by the effect of arsenic in the production of epithelioma. The influence of this drug on the nervous system and on trophic processes, although little understood, is well known. It is possible that the epithelial proliferation may be due to a process akin to fertilization.

SUMMARY.

Kangri burn cancer is a typical squamous-celled epithelioma. In the early stages the malignancy is slight, it is too slow to infect glands, and is very amenable to operation. In late cases deep glands are involved, and in many cases owing to adhesions and brawny infiltration of the skin and cellular tissue it is inoperable. In many cases its origin is in scar tissue. It is demonstrably due to a definite cause, namely, irritation from the constant application of heat. In this respect it is similar to other epitheliomata resulting from mechanical, chemical, or thermal irritation. The nature of the cause is opposed to a parasitic theory of origin, and favours a trophic theory of cancer.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

*Held in London on July 22nd, 23rd, 25th, 26th, 27th,
28th, and 29th.*

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

The Right Hon. LORD ILKESTON, P.C., M.D., D.C.L.,
President.

DISCUSSION ON
THE PROVISION OF MEDICAL TREATMENT
OF SCHOOL CHILDREN.

OPENING PAPER.

By JAMES KERR, M.A., M.D., D.P.H.,
Medical Officer (Education) London County Council.

WHEN medical inspection became general, it was inevitable that provision for treatment should also follow. The nature of that provision for treatment has not yet been worked out, but as for the majority who live in populous places it is a measure of relatively greater importance than the provision for the smaller numbers in the country, I have no diffidence in coming here to introduce the subject, and to confine myself solely to the question as it affects the urban populations. I propose merely to sketch the topic in outline, and then to deal with it as it affects medical men and the members of this Association.

The practitioner turning into the schools without special experience soon produces enormous percentages of children returned as defective. Time will lead to these results being

considerably discounted, but discount them as you will, large numbers remain who should have definite and careful clinical examination, beyond the school examination, and medical treatment.

The immediate suggestion which comes to mind is that the public or the patients should be safeguarded by a second opinion, and this is secured if the invariable rule be followed that no medical inspector should be engaged in treatment; or the converse, that treatment should only be done by others than the school medical inspectors.

Apart from the Poor Law, which cannot be named as giving any suitable provision for treatment of school children, there were only (a) the private practitioner, or (b) the charitable institutions.

All sorts of defects and disorders exist among children, but none are very numerous at school ages beyond four or five great groups. Taking them roughly in order numerically these are:

1. Children with caries of the teeth (dental cases).
2. Children with defective vision.
3. Children with aural defects, discharging ears, enlarged tonsils or adenoids, and nasal obstruction.
4. Children debilitated or anaemic and in tuberculous or pre-tuberculous conditions.
5. Children with ringworm.

Other defects or disorders are comparatively unimportant as regards numbers, and these five classes will include 95 per cent. of school cases.

The fourth of these classes (tuberculous and debilitated) can be removed from our immediate consideration, as medical treatment is of a second order compared with the necessity of existence in altered conditions of a hygienic and stimulating environment. These children will require separate consideration from any question of medical treatment at school.

There then remain dental cases, at present 95 per cent. of all school children; visual cases—10 per cent. of all school children have vision so bad as to affect their prospects in life, and another 25 per cent. require careful and detailed examination beyond what is possible in school. Aural cases, defective hearing, discharging ears, and abnormal conditions of tonsils, adenoids, throats, and noses, the numbers of these requiring treatment are, I think, greatly exaggerated. The serious cases may be taken as about 5 per cent., and another 10 to 15 per cent. as requiring careful examination and possible treatment.

Ringworm is trifling, and was only included owing to the failure of either doctors or hospitals to attain any practical remedy. It accounted for one-ninth of the absences, however.

Many years ago it fell to my lot before any one else to consider what was to be done with this mass of children. I satisfied myself at the time that, without further and more extensive arrangements, neither private doctors nor hospitals were able to offer material help in these cases. The dental cases were simply refused treatment other than extraction, and provision did not and does not exist for the numbers requiring conservative treatment. This, numerically, is the biggest part of the problem.

Determining the refraction of children's eyes is not exactly what any one would choose as the way of spending a summer afternoon, and the out-patient rooms were being choked up by these children.

The aural cases with discharging ears are beyond any help from hospitals; they are usually given a placebo and sent off. There is no hospital in London which even pretends to treat all such cases till cured. Ringworm treatment was equally ineffectual. Numbers of medical men cannot or do not recognize typical cases.

For the fees likely to be paid these cases were not worth while to the private practitioner, and practically not one in fifty ever appeared to get the slightest benefit from the private practitioner. To the hospitals these children were merely cases to be got rid of; they presented little interest to the doctors and brought no special credit to the institution. It was evident that for this group of dental, visual, aural and ringworm cases some general effort was required to bring the means of effective relief within the reach of all.

Now we have here a purely scientific problem of how to devise a method of obtaining the greatest benefit to these children for the least cost in time and money. The children's time must not be wasted from school or the