redundancy. In three others psychoneurotic symptoms had persisted since the accident but were not causing occupational disability.

Case 13.—A 26-year-old labourer returned to work six weeks after a brief concussion sustained by striking his head on a beam at work, but although under no form of medical treatment he was so often late or absent that he was dismissed four months later. During the subsequent three months he held two light jobs for short periods. He then gave up work altogether, and 18 months after the accident he made a claim for several thousand pounds in damages, complaining of constant and steadily worsening headaches and dizziness. By the time the case was settled out of court (for £400) he had been idle for more than two years. After settlement he continued constantly to attend his doctor with headache, backache, insomnia, lassitude, etc., and to draw disablement benefit and hardship allowance under the National Insurance Acts. Finally a medical board terminated his pension, after which he promptly returned to work.

My original notes on this patient commented on his evasive manner and deplorable pre-accident work record, though he had insisted to several examiners on his "perfect health before the accident." His general practitioner's records, however, go back to a decade before his injury and reveal him throughout as "a regular attender at the surgery with a variety of complaints of the same kind as those he brought along after the injury . . . he has been the same ever since he left school."

Case 22.—While handling a piece of light furniture a 49-year-old shop assistant stated she "cricked her back." She did not report the injury, but sent for her doctor the next morning. She was confined to the house for 16 weeks, and, although there were at no time any positive clinical or radiological findings, she remained away from work for two years, during which period she attended the physiotherapy department of the local hospital. On examination at the end of this period she claimed total disablement by continual and steadily increasing pain in the back and down the left leg; and by depression, anxiety, and sleeplessness, which had begun 14 days after the accident. Total superficial sensory loss of stocking distribution up to the groin on the left side was the only abnormal physical finding: her behaviour was histrionic in the extreme. At this stage the case came to trial, and her claim for damages was dismissed on the grounds of lack of evidence that there had been an accident. She subsequently returned to light work, but continued to attend her doctor with multiple symptoms. He reported that "her condition is the same as it has been for 10 years. She was a neurotic before the accident, and I expect she will remain so."

Case 36.—A housewife aged 39 was treated by her doctor for functional nervous symptoms, and was given a prescription for a capsule of "carbrital" to be taken each night and for two codeine tablets to be taken three times a day. Unfortunately the labels were placed on the wrong boxes and the patient took two carbrital capsules on the same morning, with the result that she became drowsy. The error was discovered and caused disproportionate alarm. A pharmacist administered stimulants. The patient's general practitioner advised that she be kept awake, and sent her post-haste to hospital, where her stomach was washed out. Within the course of a few days she was in an extremely emotional state, though she had, of course, recovered completely from the "overdosage." Three months later she claimed gross and disabling psychiatric symptoms which she said had been greatly increased by the experience. Both she and her family attributed her condition entirely to the unfortunate accident and appeared almost to have forgotten her earlier history. The case was settled by a small payment a few months after it happened. Since then the patient has had a good deal of psychiatric treatment, including brief admission to two psychiatric units for electric convulsion

therapy. Review of the case-records indicates that recurrent depressive episodes had begun several years before the incident of the tablets in 1956.

In summary, only 2 of these 50 unselected patients with accident neurosis were still disabled by their psychiatric symptoms on re-examination two years after settlement. Both instances were characterized by diagnostic confusion, substantial lump-sum payments, and continuing National Insurance pensions for the results of the accident. In three other cases psychiatric symptoms persisted without occupational disablement: in each instance similar symptoms had been present for many years before the accident. Symptomatic recovery in the remaining 45 patients was as complete as their subsequent medical and occupational records indicated. The most they could muster were a few trivial residual symptoms of which "a queer feeling as I turn on the vacuum cleaner" and "some nervousness on overtaking in traffic" are fair examples. Of special interest was the disappearance of contractures in three cases of hand injury: two of these patients claimed some local discomfort in cold weather. Occupational phobias (for work at heights, driving heavy vehicles, and underground work) had also cleared up, and all five of these patients had returned to their previous employment.

Of 15 patients predisposed to neurosis, 11 had recovered after settlement; of 35 without predisposition all but one had recovered completely.

[Lecture II, with a bibliography, will be published in our next issue.]

LEPROSY: A REVIEW OF 79 PATIENTS SEEN IN LONDON

BY

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Leprosy became a notifiable disease in Great Britain in 1951. No figures have yet been published from official sources concerning the number of notified cases in this country in 1960, but Cochrane (1960) stated that the number of notified cases in England and Wales was 267. Eight years earlier he (Cochrane, 1952) quoted the figure of 100 notified cases in the same area. This increase in the incidence of the disease is to be expected in view of the post-war influx of persons from endemic areas.

The number of cases present but not notified must vary in different countries. Cochrane (1952), referring to 100 cases then notified in England, thought that there were perhaps 50 further cases undiagnosed or not yet reported, while Canizares and Combes (1952), reporting 32 cases of leprosy in New York State, concluded that most leprologists agree that for each reported patient there are at least three unreported or undiagnosed.

In the present series of 79 cases, two-thirds of the patients were immigrants from the Commonwealth who had arrived in Great Britain during the past decade. Although the incidence of leprosy is low in Great Britain, diagnosis often presents difficulties to doctors in this country, and for this reason the present series of cases is reported.

Of the 79 patients with leprosy registered at St. John's Hospital for Diseases of the Skin, London, all but seven had returned to Great Britain or immigrated since the second world war; 28 were referred to the hospital by general practitioners; and the remainder were referred by consultants for further investigation and were seen by the Adviser in Leprosy to the Ministry of Health or were already under his supervision.

Country of Origin

Eight patients born in Great Britain and one in central Europe acquired the disease while working in endemic areas. The largest number of immigrants (42) came from India. Of those, 5 were of European stock and 27 of mixed parentage, some of whom were European in appearance. This is of importance, as is discussed below, since leprosy in patients not racially pigmented may be more readily confused with dermatoses seen in this country. Only three patients were from Pakistan; the remainder were from Cyprus, West Africa, Burma, Ceylon, the West Indies, Malta, Aden, Hong Kong, and Malaya (Table I).

TABLE I.—Country of Origin in 79 Patients with Leprosy

Great Britain	8*	Pakistan	3
Austria	1*	Ceylon	3
India (Indian 10, Anglo-Indian 27, European stock 5)	42	West Indies	3
Cyprus	6	Malta	2
West Africa	4	Aden	1
Burma (all Anglo-Burmese) ..	4	Hong Kong	1
		Malaya	1

* Had worked overseas in endemic area.

Patients Diagnosed Before Arrival in Great Britain

Twenty-four patients (including two Europeans) were aware that they had been treated for leprosy before arrival in this country; 17 of these sought advice at once, all but one requiring treatment, and in eight of these, acid-fast bacilli were present in histological sections of the skin. These patients presented no public-health problem, since having sought advice, they were easily supervised. The remaining seven, however, believed that they were cured, and on relapse there was considerable delay before the disease was recognized; acid-fast bacilli were present in histological skin sections in five of these (Table II).

TABLE II.—Presentation with Leprosy in 79 Patients

Originally diagnosed in country of origin	24	Continued under supervision on arrival in Great Britain	17
		Presented as fresh cases in relapse	7
First diagnosed in Great Britain	55	Symptoms developed after arrival in Great Britain ..	31
		Symptoms present before arrival in Great Britain ..	22
		Date of onset of symptoms uncertain	2

It is doubtful whether compulsory declaration of previous treatment for leprosy by patients arriving at ports in this country would be an effective measure, since initially a number of patients have a fear, fortunately groundless, of enforced segregation and social ostracism. One patient from Malta sought treatment in this country to avoid enforced isolation, and I understand that this practice is not uncommon. The point is well illustrated by the following case history.

A married Cypriot woman aged 39 developed urticarial lesions and erythematous plaques on her skin while resident in this country. Her husband was confined in a leprosy colony in Cyprus. Her general practitioner found areas of anaesthesia and made the clinical diagnosis of leprosy. The

patient, fearing segregation, refused to submit to further investigation. Later, when the risk of infecting her daughter was stressed, she agreed to allow her doctor to perform a biopsy in his surgery and the diagnosis was confirmed at a reference laboratory. Her daughter was subsequently found to be infected. Both patients then agreed to accept treatment, being assured that hospitalization was voluntary. Later, with some elementary precautions, treatment was continued under domiciliary supervision.

It may be stated at this point that leprosy is notifiable confidentially to the Chief Medical Officer at the Ministry of Health. This raises the question of the infectivity of cases so notified. Two main types of leprosy are recognized. Firstly, tuberculoid leprosy, in which the immunity response is high, skin lesions when present are well defined, and very few cases—that is, those that are in reaction and bacteriologically positive—are infectious. Secondly, lepromatous leprosy, in which the immunity response is low, and most cases—that is, those that are active and bacteriologically positive—are infectious. Some patients do not fall clearly into either of these categories; one such group, known as diamorphous (Cochrane, 1959) or borderline, is referred to in the present series of reported cases. This diamorphous (borderline) group consists often of relatively early cases, and the nature of the tissue response is not clearly evolved but may show predominantly lepromatous or tuberculoid features. Such cases are also infectious when in reaction and bacteriologically positive.

The total number of infectious patients seen in this country is small, and if their treatment presents difficulty in a general hospital they can be admitted to one of two institutions in England devoted entirely to their care. In nearly all cases the patients have agreed to be admitted on a voluntary basis when the necessity has arisen, and, failing this, have co-operated in taking such precautions as are necessary to prevent their being a danger to others if supervised at home. Many authors have stressed the high natural immunity of most adults to the disease and the necessity for skin-to-skin contact with a susceptible person, frequently a child, before infection can be transferred from an "infectious" case. Doull *et al.* (1945), in a study from the Philippine Islands, have shown that males are more susceptible to the disease than females. The high incidence in children might be explained partly on the basis of frequency of skin-to-skin contact.

Patients Diagnosed After Arrival in Great Britain

In 55 patients the diagnosis of leprosy was first made in this country (Table II). The long incubation or latent period of the disease is illustrated by the fact that in 31 cases symptoms began after arrival in this country; in 10 patients the interval between leaving the endemic area and the onset of symptoms was from three to eight years, and diagnosis was still further delayed. A case in point was that of the Cypriot, described by Haber (1944), who came to England in 1935, developed nodules on the forehead in 1939, and was diagnosed when under treatment for syphilis in 1941.

Of the patients first diagnosed in this country 22 had had symptoms for a period varying from 3 months to 21 years before arrival in England. It may be asked whether any of these cases were infectious at the time of entry. Three cases were potentially infectious: one was already under investigation, having been sent home from the armed Forces overseas; the second patient

had lepromatous leprosy but was diagnosed within six months of arrival. The third patient had neurological signs and symptoms only, which he attributed to an injury; his skin lesions were diagnosed soon after their onset, which occurred when he had been in this country for 18 months. The remaining 19 patients in this group had tuberculoid or dimorphous (borderline) skin lesions, many of them trivial, or had only neurological lesions.

Lastly, in two patients diagnosed in this country the date of onset of symptoms was uncertain.

Indigenous Leprosy

Newman (1895), referring to leprosy in the British Isles, concludes that "the endemic disease reached its zenith in the thirteenth century or earlier and declined till final extinction in the eighteenth." In the nineteenth century the Royal College of Physicians of London Report (1867) refers to a "few rare cases of indigenous origin," citing one case seen at the Edinburgh Infirmary and another at Guy's Hospital. These were presumably contact cases, as were three cases discussed in Dublin (Benson, 1877).

No further report appears until the present century, when Macleod (1925) refers to three contact cases: all were boys born in different parts of Great Britain who had not been abroad. No subsequent reports have been published, but in one contact case in the present series it is uncertain whether the infection was acquired before or after the family arrived in England.

A married woman aged 26, who had developed an early lesion of indeterminate nature at the age of 10 years when in India, did not seek advice until she had been in England for 18 months. She then had lepromatous leprosy. Her son, aged 3 years, was examined as a contact and found to have a tuberculoid lesion on the left cheek which had been present for four months. The mother accepted in-patient treatment and the child's lesion responded well to therapy.

The value of frequent examination of family contacts, especially children, is well illustrated by this case.

Clinical Manifestations

A detailed description of the clinical manifestations of leprosy is out of place in this context. Cochrane (1959) has emphasized that the two cardinal signs of leprosy are the presence of anaesthesia and the finding of *Mycobacterium leprae*. It is usually the case that lesions which are not anaesthetic contain acid-fast bacilli; if that is not so, then a thorough clinical examination will usually reveal thickening of the peripheral nerves and areas of anaesthesia over the limbs, in particular over the hands and the extremities of the lower limbs. Such criteria should be applied to any person in this country who has lived in an endemic area and presents with an unusual skin disease.

Some aspects of the clinical features of the present series of cases merit consideration.

Erythematous Skin Lesions.—Such lesions, whether nodules, macules, or infiltrated lesions, commonly occurred on the face. Further examination of the entire skin area, despite the patient's reluctance and denial of other lesions, often revealed further lesions, especially on the elbows, buttocks, or legs. Some lesions were reddish brown in colour and others were scaly. Five such patients were referred to hospital, the provisional diagnoses being dermatitis, eczema, epidermophytoses, seborrhoeic dermatitis, and ringworm.

Annular Lesions.—In the dimorphous (borderline) cases annular erythematous lesions are seen. One such patient was of especial interest.

A 39-year-old Spaniard of Jewish extraction arrived in England in 1947. Eight years later he developed erythematous macules starting on the face. For two years he was treated as a case of erythema annulare at another hospital. The diagnosis of leprosy was made in 1960, when he was referred by his family doctor to St. John's Hospital. The lesions were found to be anaesthetic.

Acute Erythema Nodosum or Urticaria-like Lesions.—Two patients presenting with erythematous macules resembling giant urticaria and areas of oedema illustrate the differential diagnosis from drug eruptions. One patient developed such an episode when under treatment with streptomycin for pulmonary tuberculosis, the other developed a widespread macular rash when a septic lesion was treated with penicillin; in neither case had leprosy been diagnosed before. The relationship of the eruptions to the drugs in these cases is uncertain, if not fortuitous. Muir (1938) associates the lepra reaction with debilitation due to illness or with drugs such as iodides, arsenicals, or mercurochrome.

Granulomatous Lesions.—In three cases the initial diagnosis was sarcoidosis. A similar diagnosis was considered in a 10-year-old boy but rejected in favour of lupus vulgaris, for which he was treated for three years. At about this time several cases of leprosy were seen, and this diagnosis was considered and proved correct. Two patients had a positive Wassermann reaction; one who gave a history of syphilis was reported by Haber (1944), who emphasized that a false-positive Wassermann reaction occurs in some types of leprosy.

Neurological Lesions.—21 patients had neurological symptoms or signs other than thickened nerves or symptomless areas of anaesthesia. Paraesthesiae or numbness had been noticed by eight patients, four of whom had had such symptoms for several years before skin lesions appeared, and in some cases paraesthesiae were related by the patient to an injury. Motor lesions were present in seven patients, two of whom had facial weakness. Seven patients had trophic ulcers on the feet and one had cigarette burns on the fingers. Three patients presented clinically with trophic ulcers.

A West African man aged 23 was treated at a casualty department for an indolent ulcer on his foot which had previously been injured by a nail. 16 months later he developed obvious cutaneous lesions and leprosy was diagnosed at another hospital.

A man aged 25, born in India, developed a boil on his calf which was painless but did not heal. Three months later his doctor referred him to a dermatologist when erythematous lesions appeared.

A man aged 57 presented with swelling and ulceration of the right foot. Examination revealed the characteristic picture of leprosy.

Finally, the importance of anaesthesia and of thickening of cutaneous nerves if seen in cases presenting with a patch of hypopigmentation cannot be overstressed, for such hypopigmentation in dark-skinned patients can readily occur with inflammatory states such as tinea, healing impetigo, and eczema.

Summary and Conclusions

Seventy-nine patients with leprosy have been seen at a hospital for skin diseases in London. Two-thirds of these patients immigrated to Great Britain during the

past decade. The countries of origin of these patients, their manner of presentation, and some diagnostic difficulties are described.

At some time while these patients were under observation in this country, acid-fast bacilli were found in the skin of at least one-third, at which stage they were potentially infective; but fortunately the resistance of the adult population to the disease is high. Intimate contact is necessary before a susceptible person can acquire the disease, although such contact need only be brief. The public health aspect of this disease in some respects is similar, on an extremely limited scale, to that of pulmonary tuberculosis, in which only a proportion of the 345,000 cases at present on the chest-clinic registers in England and Wales are "open"—that is, potentially infective.

Although some cases are self-healing, others progress to more serious and permanent complications. An awareness that the disease exists and has increased in this country will lead to earlier diagnosis. The following quotation from the Royal College of Physicians Report (1867) is of historical interest and applies in some measure to the situation in the present century.

"A few rare cases of indigenous origin have been met with in the British Isles during the present century; but by far the majority of the examples of disease which have been recognized in this country have occurred in persons who either have been born in one of our tropical possessions, or have been resident there. Such instances appear to be less infrequent than is generally imagined; and it also seems not improbable that some anomalous forms of intractable skin disease may be vestiges or obscure manifestations of a partially leprous diathesis."

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The All-India Institute of Medical Sciences has now received the donation of books and journals made to it by the late Professor J. F. Fulton from his personal collection. The Rockefeller Foundation financed the transport of the consignment, which included 451 books—mostly physiological and neurological works, a complete set of the *Journal of Neurophysiology*, and a number of volumes of other journals. A special bookplate was sent with the books, and when the library of the institute is completed it is hoped that a separate section will house the collection and be named after Professor Fulton.

STUDIES IN PORTAL HYPERTENSION

FACTORS AFFECTING OPERATION MORTALITY

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The evaluation of shunt surgery for portal hypertension awaits a more definite appraisal of the natural history of the disease. One frequent criticism is that operation can be offered only to patients with good liver function who would survive for a long period of time without operative treatment. Should the mortality from the operation be high, a group of such patients might demonstrate a poorer survival time than a group treated conservatively. Nachlas (1958) suggests that the operative mortality may be greater than the risk of death from haemorrhage. He records an operative mortality of 18% among 440 cirrhotic patients collected from the literature between 1948 and 1956.

It is our belief that the operation is of value, but its application will be extremely limited unless the operative mortality is low. We report our series of 33 patients in whom a portacaval or splenorenal shunt operation was carried out. The operative mortality was zero. Comment is made on the factors that will keep the mortality at a low level. This series is a consecutive one and includes our total experience of the operation.

Clinical Findings.—As operative mortality may be defined in a variety of ways it is important at the outset to give our own definition. We believe that a patient who dies before leaving the hospital after an operation must be counted as an operative death. No patient in this series was discharged before his wound was soundly healed or before he was able to walk and was well enough to go to his own home.

The data relevant to the patients in this series are given in the Table. In all except one of the patients the indication for operation was haemorrhage from the varices which had required transfusion for its correction. In the one exception the indication was the size of the spleen. As this patient had portal hypertension it was decided to perform a splenorenal anastomosis.

Criteria of Operability.—In this we have been guided by some of the criteria laid down by Linton (1951), particularly the following: (1) the serum albumin should be greater than 3 g./100 ml.; (2) the serum bilirubin should be below 1 mg./100 ml.; and (3) ascites should be absent. As time has gone on and we have gained more experience with the operation, these criteria have been relaxed and no patient has been rejected for operation on account of any one of these factors alone. Patients with gross ascites are not accepted unless this can be substantially reduced by medical treatment. The preoperative levels for serum albumin and bilirubin in the patients in this series are given in the Table.

Factors Contributing to a Lowering of the Operative Mortality.—The operative techniques of portacaval and splenorenal anastomosis have been described elsewhere (Riddell and Cassie, 1959) and do not differ substantially from those in use at other centres. The causes of death