History.—It was stated that the child's left eye had been red and discharging for about four months, and the mother had lately noticed that the free edge of the lower lid was becoming notched. The mother had lost a brother, aged 18 years, and a sister, aged 6 months, from "consumption." A maternal aunt and uncle had also died from that disease. The child had suffered from a cough for two months, but no physical signs were found except a few rhonchi over the back of the chest. No enlargement of the spleen could be made out. The temperature was 98.6° F.; the weight (nude) 13½ lb.

Condition on Admission: Left Eye.—The lower lid was red and thickened on its outer half and its free edge eroded; this erosion was continuous, with a shallow, semicircular ulceration (10 mm. by 5 mm.) of the palpebral conjunctiva (see Fig. 2). The ulcer had a nodular, lardaceous base, with

Fig. 2.

a few small reddish granulations forming its posterior boundary. A similar bunch of insignificant granulations were present on the free edge of the eyelid, at the junction of its outer and inner half. The child was admitted to hospital. Scattered tubercle bacilli were demonstrated in scrapings from the conjunctival ulceration.

After-History.—December 18th, 1901: During the last three days, the first phalanx of the little finger of the right hand has been thickened and painful, probably from a tuberculous dactylitis. Under chloroform, the conjunctival ulcer was excised with a Graefe's cataract knife, and its edges were thoroughly scraped with a small, sharp spoon. The resulting wound was filled with a graft taken from the skin of the left upper arm, carefully freed from fat, and kept in position by several sutures of fine China twist. January 8th, 1902: The skin graft has healed in position, and there is now no sign of any conjunctival ulceration. As the graft is not yet vascularized, it has a whitish look. January 15th, 1902: The graft is now becoming red at its edges. February 4th, 1902: Eyes examined under chloroform but no ulceration of the conjunctiva found. It may be added that the excised conjunctiva, when examined with the microscope, showed several miliary tubercles with typical giant cells. Unfortunately the sections (celloidin) were too thick to detect tubercle bacilli.

REMARKS.

Tubercle of the conjunctiva is commonly thought to be one of the rarer affections of the eye, a view borne out by most of the published statistics. I am inclined, however, to agree with the view put forward by Dr. J. W. H. Eyre,² who thinks that the rarity of the malady has been somewhat over-estimated. He reaches this conclusion from the fact that amongst 31,000 ophthalmic patients he found tubercle in 11, or a ratio of about 1 in 2,700. Personally, amongst some 3,000 patients seen at the Children's Hospital, I have recognized the 2 cases detailed above—that is, a ratio of 1 in 1,500. An extraordinary variety of type is presented by the clinical

appearances of conjunctival tuberculosis. Thus, Sattler described no fewer than four forms, namely: (1) Miliary ulcers, (2) miliary tubercles, (3) velvety granulations, and (4) "cockscorn" granulations. To these Dr. Eyre added a fifth group (5), characterized by the existence of a pedunculated tumour of the tarsal conjunctiva, closely resembling in appearance a papilloma or fibroma. My two cases furnish an instructive contrast with one another, inasmuch as the conjunctival ulcer in the first was clearly a symptom of general tuberculosis with pulmonary, meningeal, and choroidal manifestations, whereas the second case appears to be an example of primary infection. To judge from recorded cases, conjunctival tuberculosis generally belongs to the latter class. One case at least is known where the condition followed an operation for squint performed with instruments presumably contaminated with tuberculous material.

NOTE AND REFERENCE.

¹ The patient was exhibited at a meeting of the Society for the Study of Disease in Children on November 15th, 1901. ² *Archives of Ophthalmology*, vol. xxix, 1900, No. 1, p. 12.

ON THE SUBCUTANEOUS INJECTION OF PARAFFIN FOR THE REMOVAL OF DEFORMITIES OF THE NOSE.

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THE two following cases were shown by me at a recent meeting of the Medico-Chirurgical Society of Glasgow. They are cases in which there was a disfiguring deformity of the nose, the result in each case of syphilitic intranasal ulceration, with destruction of portions of both the bony and cartilaginous framework.

The first case is a woman, aged 26. She first came under my observation at the Western Infirmary in October, 1900, when she had extensive intranasal ulceration and necrosis of the septal cartilage. There was also widespread ulceration of the alveolus of the upper jaw, with necrosis of the underlying bone. Antisyphilitic treatment was prescribed, with local measures to cleanse the surface and stimulate healing, and this line of treatment was continued under the supervision of her own medical adviser in private. Two months later the necrosed alveolar process was discharged, and with the removal of this support the upper lip fell in.

She remained in good health till the end of 1901. Early in January, 1902, she observed that the shape of her nose was becoming altered, and very soon it assumed the shape shown in Fig. 1. At the same time gummata formed elsewhere—one under the inner canthus of the right eye, one at the angle of the right lower jaw, and one under the chin—and these rapidly broke down.

On February 14th the sore under the right eye was excised and the edges stitched—this healed by first intention—and the others were scraped and dressed. On February 26th, paraffin was injected into the subcutaneous tissue of the nose, with the object of restoring its shape. The paraffin used was "sterilized paraffin," with a melting point of 104° F., and the nose was prepared as for any other surgical operation. The paraffin in a molten condition was injected by means of a serum syringe, the nose being kept warm by hot dry sponge cloths, and the needle kept hot by an electric current. The needle was inserted at two places, one on either side of the nose immediately above the alae, while pressure was applied around the nose and at the inner canthus of the eyes to confine the fluid to the nasal region. The quantity injected in this case was a little over 2 drachms, and while solidifying was quickly moulded into the shape desired. Immediately after the injection of the paraffin the skin covering the material so introduced was intensely white and glazed, but no pain was complained of. The nose was covered with a layer of cotton wool.

On the following day the area which was blanched after the injection was bright red, and the skin remained glazed, but still there was neither pain nor discomfort, nor any rise in temperature. The redness slowly subsided, and the glazing disappeared. As a result of the injection, the deep depression immediately below the nasal bones has been filled

Fig. 1.—Case I, before operation.

Fig. 2.—Case I, after operation.

Fig. 3.—Case II, before operation.

Fig. 4.—Case II, after operation.

up, making a marked difference in her physiognomy, as may be seen on comparing the two photographs (Figs. 1 and 2), one taken before the other shortly after injection.

The second patient was a woman, aged 41. She was admitted to the Western Infirmary under my care on March 12th, on account of a marked depression of the nose (see Fig. 3). There was a history of syphilis having been contracted seventeen years ago, and five years ago she received a blow on the nose which was followed by a persistent purulent discharge. Two years later she noticed that her nose was "falling in," and she came to the department under my charge at the Western Infirmary, when it was found that the septal cartilage was wholly absent.

On March 14th sterilized paraffin with a melting point of 104° F. was injected in a fluid state into the subcutaneous tissue of the nose by means of a serum syringe. In this case the needle was inserted near the central point of the depression in the middle line. The paraffin was kept in a fluid state by means similar to those used in the first case; fully 1 drachm was injected, and the injected material was confined to the depressed area by digital pressure, and subsequently by the use of celloidin. The depression was so raised and the raised portion so moulded that now her nose is not only presentable, but is a well-shaped feature of her face (Fig. 4).

ON THE SPREAD OF LEPROSY AND AN EXAMINATION OF THE FISH HYPOTHESIS OF LEPROSY AS APPLIED TO KASHMIR.

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It is difficult to estimate the exact amount of leprosy in Kashmir. It is possible that there may be 300 cases in a population of a million. The distribution of the disease is peculiar. It is rare in the City of Srinagar, uncommon in the other towns and villages of the alluvial plain, but is met with, in increasing frequency, in the uplands which skirt the valley and the tributary valleys which debouch into it. With but few exceptions the lepers of Kashmir are either herdsmen from mountainous districts, or agriculturists who have mixed freely with such herdsmen. The distinctive feature of the herdsman's occupation is close contact with cattle, sheep, and goats, and residence in small, crowded, very badly ventilated huts. With regard to sex, it is an interesting fact that the disease is rarer amongst women, who form only about 10 per cent. of the lepers. The disease is also very rare among Hindus, of whom there are about three in every hundred lepers. It is not altogether clear how the disease spreads. Heredity appears to play but a small part. Of 143 lepers 115 gave no such history. In travelling in different parts of Kashmir, if in a given district one leper is found, others will usually not be far distant. This points in the direction of contagion. One theory of the spread of leprosy—the fish hypothesis—has been adopted and put forward by Mr. Jonathan Hutchinson. The suggestion is "that leprosy is in some way connected with the eating of fish in an uncooked and often decomposing state." "It is suspected that fish food of this kind, uncooked, may either carry the bacillus itself or may be the stimulant which excites it to action."

In order to test this theory in Kashmir, let us look into the question of fish consumption. A large amount of fish is taken out of the lakes and rivers of Kashmir. This is consumed in three forms, namely, fresh, dried, and in sauces or powdered relishes.

How is this fish distributed? Large quantities are consumed by the extensive boating population. Very large amounts are sold in the city, where all kinds of fish can be seen exposed for sale. Even the Hindus, in spite of its being contrary to their religion to do so, are accustomed to eat prepared fish in various forms. A certain amount of dried fish finds its way to the villages, but it is not very common there, and the demand for it is relatively small owing to the abundance of vegetables and fresh meat. There is no ground for supposing that the fish consumed in Kashmir households is not partaken of as freely by women as by men.

The next point is the relationship of the distribution of leprosy to the distribution of fish. It has already been shown that thousands of people have eaten fish in various forms

without developing leprosy, which is rarest in the districts of greatest fish consumption. (I have only met with one boatman who was a leper.)

The next question is, Are there any people who have not consumed fish who have nevertheless developed leprosy? In 1892 I completed an inquiry into the diet of 143 cases of leprosy; 79 had eaten fish, either frequently or occasionally, and 64 absolutely denied having eaten fish. In January, 1902, there were 65 lepers in the State Leper Hospital; of these, 22 stated that before developing the disease they had never eaten fish in any form; of the rest, 20 had taken fish in its three forms—namely, fresh, dry, and as a condiment; 1 had eaten it in chutnee, 3 had eaten it fresh or dried, and 19 had eaten fresh fish. Thus we see that quite a considerable number of lepers deny having eaten fish.

That there is nothing intrinsically improbable in the transmission of leprosy by fish may be admitted. Dried or salt fish contains, of course, a great number of putrefactive organisms. It might prove a suitable nidus for the leprosy bacillus. It seems, however, much more likely to be a carrier of leprosy virus, with which it has been in accidental contact, than itself an actual cause *de novo* of the disease, and if the former, then it may be relegated to a minor place as a possible medium of conveyance.

It is possible that many nutrient substances might similarly become sources of danger, such as dried or salt meat, butter, cheese, or milk. It is easy to see that a leprosy milkman might spread infection. Europeans who drink unboiled milk, if they chance to live in a district where leprosy is endemic, might contract the disease in this way. The water supply in many villages in Kashmir is scanty and liable to extreme degrees of contamination. It is well known that the lepra bacillus is frequently present in the saliva and expectoration of lepers. As in tuberculosis this must be considered as a very probable means of its spread. Many of the huts inhabited by lepers and non-lepers are absolutely without ventilation. Under these circumstances contagion or infection is by no means improbable. Children of lepers at birth are free of the disease; but unless separated from their parents they are almost sure to develop it within a few years. Here I believe contagion comes into play. It is true that lepers often deny the existence of any other case of the disease in their district. But a Kashmir peasant is not necessarily able to diagnose mild or early cases of leprosy.

The question of the spread of leprosy is one of great importance in those countries in which the disease is endemic. The measures which we take are, no doubt, governed by our theories. If acceptance of the fish hypothesis leads us to deal with the matter by aiming alone at the inhibition of unwholesome fish food, then it appears to me a mischievous theory. If the disease is to be stamped out the most important measures to be taken are, in my opinion, first, to separate healthy children from their leprosy parents as soon as possible; secondly, to withdraw lepers from the general community as completely as possible; and thirdly, to use such proper sanitary precautions as shall prevent possible infection or contagion; such, for instance, as disinfecting dirty clothing by heat before washing, forbidding expectoration on floors or ground; exercising careful supervision over the free ventilation, exposure to sunlight and general cleanliness of the buildings, inside and out, and of their surroundings, and of the disposal of dangerous refuse. It is important to regulate the contact of healthy attendants with lepers, bearing in mind the danger from their clothing and discharges. In fact, the disease should be treated as no less infectious than tuberculosis, to which it presents not a few points of resemblance.

CASE OF EPITHELIOMA COMPLICATING LUPUS ERYTHEMATOSUS TREATED BY SCRAPING AND HEALED BY THE X RAYS.

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History.—G. R., aged 59, a man of robust physique, formerly a sailor, but now a dock labourer, first came under my care in 1892 suffering from lupus erythematosus of the