Report.

TRANSACTIONS OF THE BOMBAY MEDICAL CONGRESS, 1909.

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This Congress, which owed its initiation largely to His Excellency Sir George Sydenham Clarke, Governor of Bombay, was opened on February 22nd, 1909, and lasted for a week. The ground covered in the time was enormous, as one may gather from the fact that the volume of transactions runs to 632 quarto pages. In the following brief summaries no attempt is made to deal with any papers except those which contain matter more or less new and interesting.

There were several papers read which provided excellent epitomes of present knowledge on particular subjects, and those who are anxious to find out the general position of affairs in, say, trypanosomiasis or spirochetosis, cannot do better than begin with the papers dealing with these subjects, which are included in the transactions of the Congress.

Cholera.—Rogers (Leonard) read a paper on cholera with especial reference to its treatment. In the diagnosis from ptomaine poisoning he drew attention to the leucocytosis of cholera as a distinguishing feature. He found that the loss of fluid from the blood averaged 64 per cent. in fatal cases, 52 per cent. in those cases which required transfusion but were not fatal, and 35 per cent. in milder cases not needing transfusion. He pointed out that the loss of salts went on along with the loss of fluid, and that in fatal cases there were only 0.6 to 0.7 per cent. of chlorides in the blood fluids, while if the chlorides were as much as 1 per cent. the patient generally recovered. Evidence of a mechanical block in the kidneys was found in the fact that while a pressure of 20 to 30 mm. mercury is enough to cause saline solution to pass through a normal kidney, a pressure of 90 to 100 mm. was required to pass fluid through the kidney of a patient dead of uremia after cholera.

He emphasised the value of opium in the pre-collapse stage, one or two doses only; it should not be continued beyond this on account of the risk of accumulation in the intestine and absorption of a fatal dose when collapse passes off. He recommended the use of a hypertonic solution of salt (120 grains sodium chloride and 3 grains calcium chloride to the pint). In mild cases he gives enemata of this, \( \frac{1}{2} \) to 1 pint every two hours, as soon as urgent diarrhœa has abated. In the more severe cases he recommends intravenous injections of 4 pints, repeated if necessary; the idea of using the excess of salts is to keep the fluid in the tissues. For unskilled workers he recommends intraperitoneal injections of the same fluid, and he has devised a cannula for the purpose. Uremia

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usually occurs when the blood-pressure falls below 100 mm. Hg, and he recommends hypodermic inoculation of adrenalin and digitalin to raise blood-pressure where necessary. The mortality of 175 cases treated on these lines was 33 per cent.

Diabetes.—Von Noorden gave details of his oatmeal cure for diabetes. It will not act in all cases, but in some does very well. The patient's urine is first cleared as nearly as may be of sugar by strict diet. If this does not act the patient is given two "vegetable days." With a diet consisting of tea, coffee, without milk or sugar, meat broth, five eggs and five yolks, fresh vegetables, butter, bacon, fat or oil, lemon, vinegar, mineral waters, half bottle claret, one or two small glasses cognac.

The oatmeal cure consists of 250 to 300 grammes oatmeal daily (as porridge every two hours), 200 to 300 grammes butter, 100 grammes vegetable proteid or eight eggs, nothing else except coffee, tea, lemon juice, old wine or brandy. "Three oatmeal days" are followed by "two vegetable days" and so on. When sugar is absent fish can be added to the diet on vegetable days and, if that is not followed by reappearance of glucose, cooked meat, never more than 200 grammes; later on one may try a little ordinary carbohydrates, e.g., 60 grammes potato. Under this treatment 28 per cent. of his cases lost their sugar; the cure works best in children and persons under 40. If nephritis is present, the cure is contraindicated; if diarrhœa occurs, 5 drops of the tincture of opium is given five times a day. When coma supervenes or threatens the oatmeal cure often checks it; in addition free use of carbohydrates and alkalies is needed for this condition. The disease is not cured but kept down by repetition of the cure four to five times a year for a week, viz., two oatmeal, three vegetable and two oatmeal days. He attributes the result to some substance in the oats which stimulates pancreatic secretion and has found that alcoholic ether extract of oats prevents the glycosuria which follows on injection of adrenalin in dogs.

Dysentery.—Forster read a paper on dysentery, by which he means any ulcerative colitis. He found bacillary dysentery most common in gaols.

Diagnosis of Bacillary Dysentery.—The stools in the acute stage are devoid of fecal matter, the mucus contains a large leucocytic exudate and no amoebae are to be found unless magnesium sulphate be given. Pyrexia is the rule in early stages.

The agglutination test is not of much value except when positive. Amoebic dysentery forms 18 per cent. of gaol cases. The stools always contain fecal matter as well as slime. Uncomplicated cases have no pyrexia. The mucus is generally grumous and free from leucocytes. In his opinion it is impossible to distinguish the various forms of amoebae.

As other dysenteries he included: Verminal dysentery, tubercular, lepromatous, kala-azar. In his opinion, bacillary dysentery is spread chiefly by man to man, infection being by carriers. The germ is very easily destroyed by light, drying, &c.
A case of dysentery should not be discharged, till when on solid food the stools have been normal for fifteen days and till the patient has no tender spots along his colon.

Result of vaccine therapy: 36 cases, 2 deaths without vaccine; 114 cases, 1 death with vaccine.

Castellani reported some experiments on the use of a mixed vaccine of *B. typhosus* and Shiga's bacillus. He also recommended the use of living cultures of attenuated bacteria as vaccines, the attenuation being brought about by exposing virulent germs to a temperature of 50° C. for one hour.

**Typhoid Fever.**—Davidson gave an account of typhoid fever as seen in Travancore, and among other things stated that the abdominal reflex sign of Rolleston was present in 93 per cent. of his cases. He also said that the blood-pressure is consistently low in contrast to the condition in malaria, where it is high.

Van Loghem reported a case of typhoid fever where the *B. paratyphosus* B was isolated from the blood during life; the agglutination test being positive in a dilution of 1 in 1,000 for both *B. paratyphosus* B and *B. typhosus*. Post mortem there were typical typhoid lesions, and typhoid bacilli were isolated but no *B. paratyphoid* B.

**Malaria.**—Ronald Ross read a paper on the practice of malarial prevention; he gave in detail the method of attacking the problem. For prevention he recommends mosquito destruction by drainage, &c., for large communities, and quinine distribution for villages and isolated communities; this latter because the cost of drainage is as great as in a town or large station and has to be borne by fewer inhabitants. He especially recommends, by way of attacking the main source of infection, the periodic examination of school children and the giving of systematic courses of quinine to those found infected; dose, 1 grain daily for each 3 years of age, given in freshly made pills. The paper is full of practical detail, and should be consulted in the original by all who have to concern themselves with malarial prevention.

Christophers and Bentley spoke on the relations between blackwater fever and malaria, which they likened to the relations between alcoholism and delirium tremens. Though not always inevitable, they are often precipitated by some outside cause; in the case of delirium tremens, for example, by a broken leg. They suggested that the accident is due to the production of an autolysin, but the arguments which they bring to support their theory are no more convincing than those which have been brought to support other explanations of this disease.

The same authors gave a paper on the "**Human Factor in Malaria,**" in which they showed in graphic fashion the effect of bringing together large bodies of labourers, &c., in producing severe epidemic malaria; these aggregations of people act by bringing large masses of infected and susceptible people together under conditions where the Anophelines have
the very best opportunities for rapidly transferring the disease from one
to another. They see in this factor a very serious danger for tropical
countries arising from industrial expansion.

James gave the results of anti-mosquito measures in Mian Mir,
from which one would gather, if one did not know more of the history
of that station, that the stoppage of irrigation and filling up of breeding
places had resulted rather in an increase of Anophelines and malaria:
The periods he compares are October, 1901, and October 1908; the last
after the phenomenal rains of that year!

Surgeon-General Hamilton drew attention to this point, and stated
that during the rain of 1908 the water had lain inches deep for days
together, that the drainage of the station was quite inadequate to deal
with a heavy downfall, and was in fact wrongly planned, since the drains
ran to the north and west, while the general drop of the country was
from north to south. He also pointed out that Major James in his
statistics had compared an exceptionally healthy year in the irrigation
period with an exceptionally unhealthy year after the irrigation was
stopped.

Musgrave (of Manila) referred to the result of anti-malarial measures
in Panama, where the incidence of malaria had gone down from 143 to 21.
He rather dryly put it that if anti-mosquito measures had failed at Mian
Mir, it meant that water was present somewhere where it should not
have been. Christophers and Bentley supported James's views, and urged
the value of quinine prophylaxis. Rogers also spoke in favour of quinine
prophylaxis, and pointed out that James's use of October, 1908, to show
the effect of the anti-mosquito measures was unfair, since in that year
the rainfall was 50 per cent. above normal (33 inches against a normal
21, most of the excess falling in July and August and half September).

Ronald Ross, commenting on James's paper, said that the reduction
of malaria in Havana, Ismailia, Panama, and the Malay States, was due
to anti-mosquito measures, and that quinine prophylaxis was only a small
factor in those places. At the same time he was in favour of all measures
being used, and quinine prophylaxis was specially suitable for rural
districts.

Dr. Powell analysed James's statistics for hospital admissions, and
showed that while admissions in 1904 (before irrigation was stopped)
were 553 per 1,000, in 1905 they were 52, in 1906 they were 296, in 1907
they were 135, while in the notorious 1908 they were 576, or about
4 per cent. above the rate for 1904; but in a body of 2,400 sepoys under
his care in that year at another station the malarial rate for 1908 was
treble that for ordinary years. Apart from the exceptional year, he was
inclined to suggest that some reason for the rise might be found in the
slacking off of the activity of the mosquito brigades.

Plague.—Shiga read a paper by Kitisato on rat-fleas and plague in
Japan, in which it was shown that plague in Japan was chiefly carried by
Pulex cheopis, which, although rare in Japan as a whole, is prevalent in places where plague has occurred. The author was of opinion that the disease had been imported with the flea.

Lamb gave a résumé of our present knowledge of the etiology and epidemiology of plague. This paper gives in brief the whole line of proof that plague is carried from rat to flea, and from flea to man; and is worth reading by those who have not had the opportunity of studying the reports of the last Plague Commission.

Choksy described the clinical symptoms of plague septicemia, and the acute or subacute marasmus which often develops in those patients who survive the first week. In his opinion, marasmus is due to intoxication with the products of broken-down plague bacilli.

Liston read a paper on the prophylaxis of plague. He showed how the habits of the people and construction of their houses encouraged the multiplication of rats by providing them with food, shelter, and defence from enemies. He pointed out that trapping, if carried out, must be done thoroughly and systematically, traps equal to not less than 2 per cent. of the population being regularly set. Plague, according to Liston, is carried by rat-fleas from village to village in the clothing of human beings, and destruction of vermin in clothing and baggage of travellers is a necessary precaution. He suggested that the proper periods for prophylaxis campaigns are when the epidemics are in a period of comparative quiescence. His paper was a plea for dealing with plague on scientific lines in the light of recent knowledge. For this reason he condemned the isolation of sick in hospitals as wasteful and useless, both for the prevention and for the better treating of the patient; in this, perhaps, he went too far, there is some advantage in careful treatment on general lines, even if the treatment is not "specific." Disinfection also he condemns as wasteful and futile, since it fails to get at the bacilli in the bodies of fleas and rats, and equally fails to kill these carriers. He looks on evacuation as mostly unnecessary, seeing that in 87 per cent. of cases only one occurred in one house, but he does not refer to the evacuation, not of the single infected house, but of all the houses of the group, infected or not. He advocated a redistribution of the money allotted to plague work, giving most to those measures which he classed as essential, viz., rat destruction, disinfection of travellers' clothes, inoculation, and sanitary reconstruction, with only a minimum for the non-essentials, such as disinfection of houses, evacuation, and segregation of the sick, &c.

Gordon Tucker, speaking as a practical "slum worker," pointed out the very great practical difficulties there were in carrying out Lister's suggestions. With regard to evacuation, he gave it as his practical experience, that to allow the family to remain in a plague-infected house was to court disaster. He strongly advocated evacuation, the contacts being moved into huts close to their old houses.

Browning Smith, from his experience in the Punjab, advocated rat
destruction by use of both poisoned baits and traps. He pointed out the
difficulties in the way of prevention of spread by travellers, and showed
that although inoculation gave such good results it was next to impossible
to get an adequate number of people to submit to it, except in presence of
an epidemic. He showed that the work involved in plague prevention in
India was too great for any possible staff to accomplish, and that in any
policy adopted the action taken must come from the people themselves,
guided and instructed by those capable of giving advice and instruction.

Hutchinson referred to the practical immunity of the North Kanara
Collectorate from plague in spite of free intercommunication with plague-
infected centres and repeated introduction of plague. He suggested that
it was probably associated with the method of building houses, each
detached from its neighbour, and with the practice of keeping cattle, &c.,
in out-houses and not in living rooms, as is so frequently the case in
India.

Choksy gave his experience of serum therapy in plague, and claimed a
reduction in the mortality rate by 10·5 per cent., but much better results
were got when cases were treated within the first three days; cases
treated on the first day giving a mortality of 25·30 per cent. only, the
mortality rising with each day of delay in beginning treatment. He
recommended subcutaneous injections in doses of 100 cc., three such
doses being given within the first forty-eight hours; the use of further
injections depending on the patient's condition. Choksy also read a
paper on the symptomatic treatment of plague, which is too detailed to
epitomise here.

Standage described the inoculation campaign in Bangalore, and showed
some very good results. His figures were 40,573 inoculated, with 33
plague attacks and 13 deaths, against 49,026 not inoculated, with 1,640
attacks and 1,391 deaths.

Lloyd read a paper on the "Races of Indian Rats." From his
experience Mus decumanus is almost entirely confined to the ports, M.
rattus being the common variety. From the striking constancy in the
general family likeness of the rats found in single houses or villages, he
concluded that rats, as a rule, stick closely to their original home, and do
not wander to any extent from house to house, or from village to village.

Buchanan urged the systematic keeping of cats as a means for reducing
the rat population.

Kala-azar.—Donovan spoke on kala-azar in Madras; he had failed
so far to confirm Patton's findings of herpetomonas forms in C. rotund-
datus after sucking blood heavily charged with kala-azar parasites. He
has abandoned spleen puncture, having had three deaths in 170 cases
as a result of the operation. He claims to have found the parasite in the
peripheral blood in 93·22 per cent. of all cases, the secret lying in the
method of spreading the film, which must end abruptly in a straight edge
and not in "tails"; and it is in this final edge that the infected cor-
puscles are found. The examination of, on an average, two slides on two successive days has given the above percentage. With regard to treatment, he had one recovery following the use of 1 cc. of 20 per cent. of fuchsin, twice daily for six months. Two cases recovered after severe inflammatory infections.

Rogers referred to his use of staphylococcus vaccine with a view to producing a leucocytosis, he thought he had got some promising results among his fourteen cases.

Foster stated that he had examined 1,000 blood films from kala-azar cases, and failed to detect parasites.

Bentley described the devastating epidemics on tea gardens in Assam, where as many as three-quarters of the population of a garden were wiped out in five years. The mortality, at the height of the epidemic, was 95 per cent., but when the epidemic was declining the mortality dropped to 50 per cent. He preferred spleen puncture for diagnosis, and had had no accidents; examination of the peripheral blood had given poor results in his hands. He was sceptical about the results of any treatment, as cases sometimes recovered spontaneously.

Spirochetosis.—Two papers, one by Choksy on human spirochetosis, and one by Carter on spirochetosis in mammals, were chiefly concerned with an epitome of our present knowledge on this subject. They should be useful for reference, especially the paper by Carter, which is followed by a bibliography.

Oriental Sore.—Row described the cultivation of *Leishmania tropica* on blood serum at room temperature. After twenty-four hours the micro-nucleus is seen to have become fused with the macro-nucleus, and the cytoplasm stains a pale bluish tint, while the whole parasite increases in size and becomes somewhat pear-shaped. The nucleus now elongates to a kidney shape or becomes tailless at one end, then throws off a bud from its free side; this increases and carries with it its own share of hyaloplasm, thus producing a fission form of two individuals, which further divide until a group of eight elements is formed. At the end of thirty-six hours were found large masses of these division forms, which, when fully developed, resemble bunches of curved bananas. The micro-nucleus of these preflagellate forms is budded off from the nuclear mass on the side next to the broader anterior end of the parasite and travels towards the anterior pole. Between forty-eight and seventy-two hours the parasites become flagellated by the extrusion of a flagellum from the anterior end. The flagellum originates in the micro-nucleus and is one and a half times the length of the body. The parasites are actively motile, the motility being due entirely to the movements of the flagellum; they remain alive for about twenty-four hours, and then rather rapidly disintegrate, so that at the end of one hundred and twenty hours all traces of the parasites have disappeared from the culture. The cultural forms show differences from those of *L. donovani*; they are much bigger, they are more resistant to external
conditions and have been cultivated three days after removal from the body. The flagella are much longer and show more undulations.

The parasite in culture is able to survive bacterial contamination to some extent, and the development into flagellates only takes about half the time that is required for the development of kala-azar parasites. The best medium is human blood serum, and the optimum temperature is 25° to 28° C., which is higher than that for kala-azar parasites (22° C.).

Biting Flies, &c., as Carriers of Disease.—Greig gave a résumé of modern knowledge of the various tsetse-flies and the diseases caused by them. Carter also gave a compilation dealing with transmission of disease by ticks and biting flies in general.

Howlett read an interesting paper on the "Habits, &c., of the India Sand-flies (Phlebotomus). He suggested that the fact that the period of their maximum prevalence coincides in many districts with the most unhealthy period of the year, when short fevers are common, called for further investigation.

Snake Venoms and Anti-venomous Sera.—Lamb read a paper on this subject, in which he again emphasised the specificity of anti-venomous sera; he also pointed out that a cobra could inject as a maximum 350 mgm. of poison, while 1 cc. of the serum issued from Kasauli when mixed in vitro was only strong enough to neutralise 1 mgm. poison; it was therefore necessary to give large doses of serum intravenously.

For viperine intoxication he recommended the use of adrenalin chloride to counteract the vaso-motor paralysis. Wall, in his article, showed that in a large number of cases of snake-bites the symptoms were due to fright alone, and instanced cases of bites by perfectly innocuous snakes which were followed by death from fright; he gave the differential diagnosis between this condition and the symptoms of snake poisoning.

In the wound itself, if poison has been introduced there is invariably pain, swelling and bleeding, and purplish discoloration of the subcutaneous tissues when exposed by incision. The pattern of the punctures is useless for diagnostic purpose. He quoted experimental evidence from Fayrer and A. J. Wall which seemed to prove conclusively that the much advocated ligature was absolutely useless as a treatment for snake-bite, also experiments to show that immediate amputation of a bitten part failed to prevent death from snake poison. He suggested the intravenous injection of 5 per cent. permanganate of potash, but did not appear to have tried it himself! Lastly, he advocated calcium chloride for treatment of bites by viperine snakes and persistent use of artificial respiration for cobra bite.

Lauder Brunton read a paper on the action of snake venom, in which he advocated the use of his "snake lancet," with the rubbing of permanganate of potash into the wound.

Leonard Rogers reported twenty-nine cases of snake-bite treated by this method, with twenty-eight recoveries.
Horton stated that in Kathiawar forty-one cases had been reported as treated by the "snake lancet," with one death, but he was not satisfied as to the identity of the snakes in these cases; he recorded two cases where the identity of the snake was certain; these were treated by incision and application of permanganate, but both died.

Lamb pointed out that the experiments of Rogers, in which he used a hypodermic needle for injection of the venom, did not copy the natural method, and that Rogers had not yet published the results of his promised experiments on the protective influence of permanganate after actual snake-bite.

Lamb also reported three experiments made by himself on monkeys, in which the permanganate was applied to the opened wound three minutes after a cobra bite; in all three cases the monkeys died. He pointed out that the conditions of these experiments were infinitely more favourable to the treatment than any likely to occur in Nature.

Powell advocated the removal of as large a portion of the tissue round the bite as possible.

Rogers, in reply, pointed out that in Lamb's experiment the bite was made into muscles, whilst in man it usually occurred on the extremities. He also showed that Lamb's monkeys must have got a very much higher dose in proportion to their weight than a man was likely to get.

Actinomycosis.—Hooton and Powell each reported three cases of actinomycosis in India, a disease which appears to have been seldom reported in that country. It is comparatively rare also in animals, since at the Bombay Veterinary College there is generally only about one admission a year on account of it.

Beri-beri.—Braddon read a paper on beri-beri; he reported that in Malay although 250,000 cases had been treated in ten years, not one occurred among non-rice eaters. Of these cases, 97½ per cent. occurred among 300,000 Chinese, who ate stale uncured rice, while a similar number of Tamils and Malays provided only 1½ per cent. of the cases of beri-beri. The Malays only eat freshly decorticated rice, prepared as wanted from day to day, while the Tamils eat a parboiled (cured) rice. He reported some observations made by Fletcher at the Kuala Lumpur lunatic asylum. Half the sixty inmates were given uncured rice, and the other half took cured rice; in all other respects their conditions were identical. Beri-beri occurred only among those eating uncured rice during the two and a half years that the observation lasted. He gave details also of Fraser and Stanton's experiments, which have already been published elsewhere (Lancet).

Evidence showed that the intensity of the poisoning depended on the amount of rice consumed, the length of time during which it was consumed, and the age (staleness) of the rice used; it also varied with the resistance of the individual, with use (toleration), and with the degree to which the rice is diluted with fatty and proteid foods. The
writer gave a complete account of the symptoms of the disease, and (quoting from the Norwegian Commission and from Holst) distinguished it from pelagic dropsy (ship beri-beri) by the fact that, in the latter, symptoms of nerve lesion are invariably absent. As regards prognosis and treatment, in his opinion no moderate case of beri-beri should die if he survived the first twenty-four hours after coming under treatment, which consists in immediately stopping the use of uncurd rice, and in clearing what remains out of the intestine by use of castor oil. He also strongly recommended the use of atropine; digitalis he looked on as dangerous, and strychnine and arsenic as useless.

Kenneth Macleod discussed the relations between epidemic dropsy and beri-beri, and concluded that they were distinct diseases, the principal points of distinction being the sudden onset, the presence of initial fever and of rash, the absence of definite symptoms of nerve lesions, and the anaemia in epidemic dropsy. McGill referred to an epidemic of "neuritis" with oedema, affecting sixty-one men of a regiment at Poona; all the cases occurred in heavy drinkers, and fifty-one occurred within four months. He was inclined to attribute the epidemic to beer-drinking, but was unable to account for the epidemic character of the outbreak.

Musgrave (Manila) suggested, as a result of experiments in Manila, that beri-beri was due to an organism growing on rice and resistant to boiling.

Powell spoke in favour of a toxic cause for beri-beri, and compared it with such diseases as alcoholism, ergotism, and pellagra; many cases of alleged beri-beri had been found to be due to ankylostomiasis.

Leprosy.—Shiga read a paper on leprosy in Japan. The number of lepers in Japan in 1906 was 23,815, or 5 per 10,000 population; these were distributed among 22,887 families, giving 104 lepers per 100 infected families. He had recently succeeded in growing an acid-fast organism from lepra nodules by inoculating on to glycerine potato agar containing human serum. Most of the bacilli were not acid-fast at first, resembling rather diphtheria bacilli, but on subculture they were perfectly acid-fast; after two to three weeks’ culture, the acid-fast property decreased and eventually disappeared. Animal experiments gave negative results.

Unna described two methods for staining in leprous tissue the dead bacilli which have lost their acid-fast properties. The details are too long to be given here, and those interested are referred to the original paper.

Deycke Pasha reported on the results of the use of nastin in leprosy. Injection of this substance (which is a fatty acid isolated from Streptothrix leproides) is usually followed by reaction in the leprous nodules, the bacilli of which are found to lose their acid-fast properties and to break up; this is accompanied by phagocytic reaction of the tissues; injection
of hetol before the nastin greatly increased the intensity of the reaction. Later he found that benzoyl-chloride added to the nastin in certain proportions had the same effect, and after experiment he arrived at a solution (nastin B) which was therapeutically active, but did not cause dangerous reactions.

Williams gave the results of Deycke's treatment in five cases of leprosy, all of which showed great improvement, especially in regard to their general health and to disappearance of ulcers.

Jackson also reported on the results of treatment in nine cases, all of which had improved after fourteen weeks, some more, some less.

In the discussion some doubt was thrown on the diagnosis of one of the cases of which Deycke had shown photographs, and three speakers gave it as their opinion that it was a case of yaws.

Smith and Bisset gave a very complete résumé of our present knowledge of leprosy, and reported on the results of nastin B treatment in six cases, all of which showed improvement.

Rodriguez gave details of the results of nastin B treatment in thirty-five cases, most of which showed improvement; his paper is illustrated by photographs of six cases before and after treatment. They are certainly very striking. The same writer mentions a curious fact that when lepers ate pork it was followed by fever and inflammation of the tubercles and glands; but when the same patients had been under nastin treatment for some time, they were able to eat pork with impunity.

*Streptothricosis.*—Musgrave and Clegg presented an important paper on streptothricosis, with especial reference to the etiology and classification of mycetoma; it is much too full of detail to be epitomised here, and should be studied in the original. Their conclusions were that the group of diseases known as actinomycosis, streptothricosis, and nocardiosis are caused by one or other species of a streptothrix, and that the terms lumpy jaw, Madura foot, mycetoma, &c., represent only the anatomical distribution of the infections to which any one of the species may belong.

Surveyor also read a paper on Madura foot, in which he attributed the white variety to a streptothrix, and the black variety to a mould. He has not grown the mould, but formed his opinion chiefly as a result of microscopic examination of granules after treatment with hypobromite of soda.

Boccaro also read a paper on the subject, which contained a résumé of our present knowledge of Madura foot.

*(To be continued.)*