Transbaikalia, and possibly in Mongolia. The evidence in regard to cats, dogs, and jackals is far from conclusive, but there is no reason to believe that these animals play any great part in spreading plague. The same is true of pigs, sheep, and goats. Horses and cows do not appear to have ever contracted plague under natural conditions, and may be disregarded as active agents in spreading it. Birds are equally immune to the disease, and there is no evidence to show that either birds or reptiles or fishes have ever aided in multiplying and diffusing the infection. Insects, on the other hand, are probably agents of considerable importance in the spread of plague.

NOTES AND REFERENCE.

- ⁵⁹ Auger de Biterris, quoted by Hecker, *Epidemics of the Middle Ages*.
⁶⁰ Creighton, *History of Epidemics in Britain*, vol. i, p. 314. ⁶¹ Bognhurst (*Loimographia*, chap. iv), on the other hand, says that no animal of any kind, tame or wild, suffered from plague during the Great Plague of London.
⁶² Creighton, *op. cit.*, vol. i, p. 558. ⁶³ Quoted in Parliamentary Papers, China, No. 3 (1878), pp. 22-23. ⁶⁴ Quoted by Michoud, *Medical Reports of the Chinese Maritime Customs*, No. 48. ⁶⁵ Cantlie, *loc. cit.* ⁶⁶ *Lancet*, September 17th, 1898.
⁶⁷ Report of the Sanitary Commissioner with the Government of India, 1897, pp. 83 and 85. ⁶⁸ Janus, 1897-98, p. 168; and 1898, p. 145 (Stékoulis).
⁶⁹ Health Officer's Report, p. 63. ⁷⁰ Report of the German Plague Commission, p. 295. ⁷¹ *Centralbl. f. Bakt.*, xxi, 20-21. ⁷² It is noteworthy that probably the oldest experiments on record concerned with the question of plague in the lower animals were performed on dogs. In 1720 Dr. Couzier, in Marseilles, found that both blood and urine taken from a plague patient and introduced into the crural vein of a dog produced the disease. Deidier, on the other hand, failed to give dogs the plague by feeding them on the bile of a plague patient (*The Medical Works of Dr. Richard Mead*, Edinburgh, 1765, vol. ii, pp. 6 and 8). ⁷³ Health Officer's Report, p. 62. ⁷⁴ *Ibid.* ⁷⁵ *Ibid.*, p. 143. ⁷⁶ Hankin, *loc. cit.* ⁷⁷ *Ibid.* ⁷⁸ Report of the Sanitary Commissioner with the Government of India, 1897, pp. 83 and 85. ⁷⁹ Cantlie, *loc. cit.* ⁸⁰ Stékoulis, *loc. cit.* ⁸¹ Zabolotny. ⁸² McCandless, *Chinese Customs Medical Reports*, No. 51. ⁸³ Borel, *Bulletin de la Société de Médecine Maritime*, Marseilles, 1899, No. 4. ⁸⁴ Shadwell, Epidemiological Society, December 15th, 1899. ⁸⁵ Report of the German Plague Commission, p. 294. ⁸⁶ Wilm, *loc. cit.* ⁸⁷ Cantlie, *loc. cit.* ⁸⁸ Health Officer's Report, p. 63. ⁸⁹ Government of India, Report on Plague in India, vol. i, p. 38. ⁹⁰ Report of the German Plague Commission, p. 288. ⁹¹ *Archives des Sociétés Biologiques*, T. iv, 1898, p. 175. ⁹² *Centralbl. f. Bakt.*, April 15th, 1899. ⁹³ *Epidem. Soc. Trans.*, N. S., vol. xvi, p. 57. ⁹⁴ *Indian Medical Gazette*, January, 1897. ⁹⁵ *Loc. cit.* ⁹⁶ Layug, *Chinese Customs Medical Reports*, No. 51. ⁹⁷ *The Englishman*, Nov. 24th, 1893. ⁹⁸ *Epidem. Soc. Trans.* ⁹⁹ *Indian Med. Gazette*, July, 1897. ¹⁰⁰ Report, p. 296. ¹⁰¹ The absence of any disease or mortality in the cattle owned by the highlanders of Garhwal and Kumaon, where plague is endemic, and where the people live in the closest proximity with, and often under the same roof as, their cattle, is strong additional proof that these animals are not liable to plague under natural conditions. ¹⁰² Government of India Report, i, 38. ¹⁰³ Health Officer's Report on Plague in Bombay, 1896-97. ¹⁰⁴ Report, p. 290. ¹⁰⁵ Government of India Report, i, 38. ¹⁰⁶ *Epidem. Soc. Trans.*, *loc. cit.* ¹⁰⁷ Health Officer's Report, pp. 62 and 70. ¹⁰⁸ It is obvious that birds of this sort might pick up in their beaks and carry to a distance plague-infected rags or other material, and thus aid in diffusing the infection; an analogous statement might, of course, be made of nearly all the other animals mentioned in the text. ¹⁰⁹ *Archives des Sociétés Biologiques*, vi, 1898, p. 69. ¹¹⁰ Report, p. 295. ¹¹¹ *Loc. cit.* ¹¹² *Loc. cit.* ¹¹³ *Indian Medical Gazette*, June, 1897. ¹¹⁴ Ref. in *Centralbl. f. Bakt.*, xxii, p. 349. ¹¹⁵ BRITISH MEDICAL JOURNAL, September 8th, 1894. ¹¹⁶ Parliamentary Papers relating to the Spread of Levantine Plague, 1879, p. 51. ¹¹⁷ *Centralbl. f. Bakt.*, xxii, 49, 1897. ¹¹⁸ *Ibid.*, p. 382.

A NOTE ON HERPES PROGENITALIS FROM A DIAGNOSTIC POINT OF VIEW.

By ARTHUR COOPER,

Surgeon to the Westminster General Dispensary.

REGULAR herpes is perhaps the best characterised and the most easily diagnosed of all the lesions which occur on or about the genital organs. Irregular herpes, on the other hand, not infrequently leads to mistakes in diagnosis.

In its typical form herpes presents the well-known appearance of a group of small vesicles on a red base and surrounded by a red areola. It is frequently accompanied or preceded by a sensation of itching or burning, and it usually disappears completely within a week without affecting the lymphatic glands. When situated on skin or exposed mucous membrane the vesicles quickly dry up into thin scales, the appearance of which is as characteristic as that of the vesicles themselves, and these soon fall, leaving a healthy surface. When a moist surface which is in contact with another moist surface—that of the prepuce and glans penis for example—is the seat of herpes, the vesicles quickly become erosions, and when the mucous membrane is in a healthy state these heal almost as quickly as when the skin is affected.

Herpes may be irregular either in its distribution or in its course. As regards distribution, the several spots, instead of

being grouped in the ordinary way, may be discrete. This should hardly lead to error, as the separate spots have all the other characteristics of herpes. But occasionally there is only one spot, and it is this single-spot herpes that is most likely to mislead, not on account of any peculiarity in the spot itself, but because of a general impression that herpes ought necessarily to be grouped, and the consequent risk of its being mistaken for something else, and thus receiving inappropriate treatment. It should always be remembered that herpes is one of the most sensitive of lesions, and that nothing resents ill-treatment more promptly or more actively.

Irregularities in the course of herpes may be due to various causes. One of the commonest is balanoposthitis. The inner surface of the prepuce and the glans penis are the most frequent seat of herpes, and when the mucous membrane is unhealthy, and especially if the prepuce be long and ill-kept, the irritation set up by decomposing smegma and contact with the urine serves to prolong the course of herpes, and in these circumstances some degree of ulceration often takes place. Herpes may also run an irregular course from some constitutional dyscrasia, and without any obvious local cause. I have at present under observation a patient in whom the herpetic spots habitually run together and form an ulcer, which at a certain period might easily be mistaken for a local or soft chancre. This patient is an old syphilitic, and it would probably be impossible to convince him that these repeated attacks are not part of his old trouble. In such cases as this valuable help in diagnosis may sometimes be gained by careful examination of the edges of the ulcer with the aid of a lens, when what has been called by Fournier its "polycyclic" outline, resulting from the multiple segments of small circles left by the original herpetic spots, may be made out. This sign, however, is of course absent in the case of single-spot herpes, and in any case it is soon obliterated if the ulceration spreads at all widely.

Another cause of irregularity is the use of irritating applications, and whether the irritation be set up by the patient's own secretions or artificially by drugs or in any other way, there is always risk of the inguinal glands becoming affected. In such cases usually only one, or perhaps two, glands are involved, and the inflammation is subacute. Occasionally it is acute, and suppuration may follow. Rarely the adenopathy is indolent, multiple, affects both groins, and resembles that of primary syphilis so closely that if irritants—especially nitrate of silver—have also been applied to the sore, and inflammatory hardness thus set up, it may be impossible to make an immediate diagnosis.

The intimate association of herpes with nervous irritation has long been recognised, and the nervous element may play a prominent part in determining an outbreak. For example, a married man who is liable to herpes exposes himself to risk, and in consequence suffers from considerable nervous depression and anxiety, partly from remorse, partly from fear of contagion. This leads to frequent examination and manipulation of the parts, and in a few days an attack of herpes comes on. If, in these circumstances, there happens to be only one spot, as in a case I saw not long ago, and the patient takes it for a "chancre," and irritates it, there may be for a time considerable difficulty in arriving at a correct diagnosis.

If a patient is exposed to contagion while suffering from herpes, the herpetic spot or spots may be inoculated with the virus of the local chancre or of syphilis, in which case the resulting lesion will be single or multiple according to the number of places that "take," just as in the case of vaccination.

In a case of syphilis, again, herpes may chance to appear at the close of the incubation period, so that both syphilitic and herpetic lesions are present at the same time. When this occurs the danger is lest the herpes only should be recognised and the primary lesion of syphilis overlooked.

In the following case it seems probable that herpes was present at the time of infection as well as at the beginning of the primary stage of syphilis: A gentleman who had previously consulted me for herpes came on September 25th complaining vaguely of soreness about the penis, which he had first noticed three days before. The last exposure dated back several weeks. On slightly retracting the prepuce two typical herpetic erosions were seen near the margin, but on complete retrac-

tion four more lesions were discovered. First, on the middle line of the prepuce, close to the furrow, was a round shallow ulcer about the size of a hemp seed, and with a clearly indurated base, and near to it were two other sores similar to the first, except that neither was perceptibly indurated. Further away was a fourth similar ulcer, also without induration. The inguinal glands were enlarged, multiple and indolent on both sides, and a diagnosis of syphilis was made and mercury prescribed. On October 1st the two herpetic spots had disappeared. The two ulcers nearest the first were now also indurated, but the one further away remained unindurated. On October 10th all were healed except the first. The patient was not seen again until November 1st, when all had healed, but the three indurations remained. Roseola was present on the skin, and other signs of syphilis followed in due course.

The following points may be found useful to keep in mind in any doubtful case in which sores are present on or near the genital organs: (1) The chances of irregular herpes should always be considered; (2) the lesion or lesions, and also the inguinal glands, should be closely and repeatedly examined until the diagnosis becomes clear; in the meantime (3) do not apply irritants, and (4) do not give mercury.

A CASE OF SUPPURATION IN THE MASTOID WITH OPTIC NEURITIS ON THE SAME SIDE: OPERATION: RECOVERY.

By J. PRESTON MAXWELL, M.B., F.R.C.S.,
Changpoo, South China.

THE presence of optic neuritis in the complications which occasionally follow middle-ear inflammation is generally, and rightly so, taken as indicative of serious intracranial trouble. And although cases have been reported in which this sign has cleared up without manifest intracranial disease having declared itself, yet these are sufficiently rare to warrant the publication of the following case:—

L., a Chinese girl, aged 17, was an inmate of one of the mission schools at Changpoo. At the time of her illness she was in fairly good general condition and had never suffered from any serious illness. A month before I saw her she had suffered from a sharp attack of otitis media, probably induced by the careless use of the ear instruments common in a Chinese barber's set of implements. This attack had evidently been acute at first and had never thoroughly cleared up.

Temperature chart. After October 5th the temperature was normal. A, no optic neuritis; B, optic neuritis marked on the left at 9.30 A.M.; C, optic neuritis disappeared.

I was called to see her on September 20th, 1899. She was suffering from an afternoon fever which had been thought to be a quotidian ague, and complained of pain in the left temporal region. A little foul-smelling pus was coming from the meatus and there was a small perforation of the tympanic membrane in front and below. There was slight tenderness over the mastoid processes but no oedema. Regular washing out of the ear with a solution of carbolic acid was at once undertaken and the eyes were examined. Both fundi were perfectly normal.

On September 22nd the pain in the head was much worse, and was con-

fined to the temporal region, and there was slight oedema over the mastoid. The pupils were dilated with atropine, and the fundus in each eye was found perfectly normal. A message was at once sent off to her parents asking for permission to operate, but no reply was received till September 25th, as they lived a day and a half's journey away. During these two days she became rapidly worse, the pain in the head being continuous and severe, sometimes causing her to cry out, and wrecking her night's rest. The swelling over the mastoid also increased, and some swelling appeared in front of the ear in the temporal fossa. The temperature was now continuously raised, and the pulse generally ranged from 120 to 130. At no time during the illness was there anything like a cerebral pulse. The headache was entirely confined to the left temporal region. On the evening of September 24th I again examined the eyes, and found optic neuritis commencing in the left eye, the disc being swollen, its edges blurred, and the veins full. The patient herself spontaneously complained of the vision of this eye being dim. The fundus of the right eye was normal, and its vision natural.

On September 25th, permission having been obtained, I made the usual vertical incision behind the ear, prolonging it upwards and slightly forwards for about an inch. Having turned the ear forwards, a small abscess was opened at the upper margin of the external auditory meatus beneath the periosteum. Using a chisel and mallet, the antrum was opened, the chisel passing through apparently healthy bone. Immediately it was opened, pus welled up from the mastoid cells. The opening into the middle ear, the edges of which were bare and rough, was enlarged, and the contents of the middle ear—namely, the malleus, incus, and some granulation tissue—were removed with a small Volkmann's spoon. The stapes was not seen. A chain of six silk threads (No. 4) was then passed round, entering at the wound in the mastoid and passing out at the external ear. The parts were irrigated and dressed, iodoform being freely used, and the wound behind the ear packed with gauze. During the next six days the wound was dressed twice a day and thoroughly irrigated with 1 in 2,000 biniodide of mercury lotion. In forty-eight hours the temperature had fallen to normal, and the pain, which persisted for an hour or two after the operation, had entirely disappeared. The optic neuritis quickly subsided, and at the close of a week after the operation had entirely disappeared, the dimness of vision having disappeared within forty-eight hours of the surgical treatment. At the close of ten days the discharge rapidly diminished, and the irrigating lotion commenced to pass into the pharynx, to the great annoyance of the patient. On the twelfth day after operation the silk threads were removed, and the posterior wound rapidly closed. At the end of six weeks the discharge had entirely ceased and the patient was allowed to cease treatment. The middle ear showed no signs of unhealed granulation tissue, and its walls appeared to be covered with scar tissue. A watch was audible on this side at a distance of 1 inch from the external auditory meatus.

As to the surgical procedure, it was simple, the silk thread drain acting admirably. The optic neuritis was quite clear, but as to its cause I am unable to form an opinion. At no time were there signs indicating the presence of an abscess within the cranium, nor, on the other hand, was there any sign of ocular paralysis or irritation of the nerve centres governing the muscular movements. The interest and importance of the case lies, to my mind, in the rapid recovery after free drainage, and the comparatively rapid and complete disappearance of the signs in the left fundus oculi.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A CASE OF SEPTIC THROMBO-PHLEBITIS TREATED BY INJECTIONS OF STREPTOCOCCUS ANTITOXIN.

In the case which I now report there seems no reason to doubt the good resulting from injections of the antitoxin of streptococcus pyogenes.

Mrs. M., aged 26, a primipara, was confined on November 21st, 1899. No doctor was present. Three days after the confinement the right leg became swollen, pain in the knee preceding the swelling. She got up on November 28th, and moved about the house in a more or less crippled state for some days, but had to take to bed at last. After rest and poultices she recovered somewhat, and got up for some time every day until December 24th, when a painful swelling rather suddenly formed at the saphenous opening of the right thigh. She became very ill, and had to remain in bed. I saw her for the first time on December 28th. She had been having for some days repeated rigors and profuse sweats. Her colour was deadly pale, her eyes sunken, and her hair wet with perspiration. Her temperature was 104° F., and her pulse very rapid and weak. The upper third of the right thigh was greatly swollen, the skin red, the surface temperature raised, and there was great tenderness on movement or pressure. Pain and great tenderness, with some degree of swelling, also existed in the right iliac and hypo-