advent of salvarsan than before. It may be said for salvarsan that the pains of tabes are diminished by 606. The nervous lesions which we are accustomed to treat by potassic iodide are also helped by salvarsan. Salvarsan is probably a little better of the two drugs.

It has been already mentioned that salvarsan renders syphilitics much less dangerous to the community. This puts into the hands of health authorities an instrument of the greatest value, which has not yet been used as freely as might be. One of the difficulties in the control of syphilis has been in the very long time during which it was necessary to detain patients in hospitals and almshouses. The rapid action of salvarsan does away with that serious objection.

It was early recognized that Professor Ehrlich would not remain satisfied but would continue his studies and a neosalvarsan, numbered 914 is now the subject of clinical investigation. It is more easily manipulated, is less irritating as an intramuscular injection and may be repeated indefinitely. Its virtues are not finally settled and it has not yet been put upon the market.*

SUMMARY.

The present status of salvarsan may be summarized as follows:

It is the most rapid and powerful antisyphilitic known.

It is not without its dangers which are sufficient to induce *caution* in its use but not its abandonment.

It is not yet possible to promise absolutely a cure.

One should not urge its use upon those who are impressed by its possible ill effects.

It should be used in conjunction with mercury in all cases in which a diagnosis can be made before general symptoms appear.

It should be used in all cases in which patients are not progressing well under ordinary treatment in any stage.

It should be used in all cases in which patients are an especial danger to the community.

It should not be used in maximum doses but rather in repeated medium doses and in exceptional cases in repeated minimum doses.

So used it is one of the most wonderful drugs ever conferred upon humanity.

* Since this paper was read neosalvarsan has been placed at the disposal of the Profession.—Editor.

Clinical Department.

TWO CASES OF ORCHITIS DUE TO MUMPS TREATED BY OPERATION.*

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THIS paper is a preliminary report of the pathological findings and clinical results obtained by operation upon two cases of orchitis due to mumps. The primary object in operating was to prevent, if possible, the atrophy which so frequently follows this affection. The method employed, which was suggested to me some time ago by Dr. Hugh Cabot, was based upon the theory that atrophy resulted from the increased intratesticular pressure caused by the inflammation. Relief of this tension obtained by slitting the tunica albuginea would, it was hoped, restore the circulation and preserve the testicle.

Operation having been decided upon for the above reasons, it seemed an excellent opportunity to see if we could isolate the organism which other observers had described, and to secure for study specimens from the diseased gland.

The patients were two young men, roommates, one of whom presumably got the infection from the other.

CASE I. F. C., age 22, cashier, single. Never sick except for measles. Denies venereal infection. July 1, 1912, the right parotid began to swell and be painful. A few days later, the left side followed suit. July 9, the left testicle became sensitive and began to swell, and for two days got progressively worse. There was no burning on urination.

My first examination, July 11, showed a flushed, well developed young man, with considerable swelling of both parotids. Thorax and abdomen normal. No urethral discharge. Right testicle normal. Scrotum contracted, not reddened. Left testicle was three times as large as its fellow, hard, smooth, only moderately tender. No hydrocele, skin not adherent. Epididymis and vas not abnormal. Rectal examination showed a soft, small prostate, not tender. Vesicles not indurated. T. 104°. P. 104. R. 26. He was sent to the Baptist Hospital, and flaxseed poultices applied.

July 12. Skin of scrotum red. Some hydrocele present. Testicle was larger and more tender. The epididymis had become palpable. Operation advised but rejected. July 13. Testicle felt a bit less swollen. Hydrocele had increased. Epididymis was more clearly involved. The patient requested operation which was done under ether, after soap and water and alcohol preparation.

Operation: 2-inch vertical incision along anterior aspect of left scrotum. Tunica vaginalis opened with escape of about one ounce of turbid yellow fluid from which a culture was made. The testicle was delivered through this incision. It was three times the size of a normal testicle, firm and elastic on palpation. The color was more bluish than is usual, and throughout the tunica albuginea were scattered many minute reddish specks, probably punctate hemorrhages. The epididymis was definitely enlarged, soft, without induration, and of a deep red color which at the globus major became almost black. It was the picture of intense acute congestion. The cord was somewhat edematous, the vas normal. The tunical albuginea was slit with the knife in a dozen places, the incisions being not over one-quarter inch long, parallel to the long axis of the testicle, and extending just through the tunica. There was considerable ooze from these, lasting a few moments; one spurter required a ligature. The testicular tissue showed no tendency to extrude. The tunica covering the epididymis was also scored in about six places.

The testicle was replaced in the scrotum, a rubber tissue drain left in and the scrotal wound closed

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about the drain by a subcuticular silk worm gut suture. The scrotum was tightly compressed in an Alexander bandage.

July 14. T. normal. No pain since operation.
July 15. Same. Urine turbid, high-colored, containing v. s. t. of albumen. No sugar. Sediment: some pus.
July 16. Drain removed. Testicle of normal size. Only slightly tender.
July 17. Up and about. Urine still contains pus.
July 19. Discharged from the hospital.
July 20. Stitch removed. Testicles of same size. Urine sparklingly clear, no albumen.

CASE II. P. H., age 27, waiter, single. Never sick before. Denies venereal disease. Both parotids began to swell on July 18. Rest in bed advised and carried out. Six days later pain and swelling in parotids had almost disappeared. Left testicle began to swell followed in a few hours by swelling of the right testicle. Patient complains of sleeplessness, headache, pain in joints and dull ache in testicles. Some frequency of urination. A. M. T. 103°. P. M. T. 105.2°. P. 108. General examination at this time showed a soft systolic murmur over precordia, otherwise nothing abnormal save for slight swelling in parotids. No urethral discharge. Scrotum not reddened; contracted. Both testicles swollen, hard and tender, the left being more so than the right. Left epididymis palpable and tender, right normal. No hydrocele; neither vas enlarged. Sent to Baptist Hospital. The next day (July 26) the left testicle seemed much better, the right decidedly worse. A. M. T. 103°. P. 92.

Operation was done under ether; the right testicle was delivered as in Case I and found to present an almost identical picture. The same operative procedure was followed.

July 27. Has had no pain. Slept well. Afternoon temp. 100.2°. P. 88. Urine high colored, reddish, sp. gr. 1023. Albumen v. s. t. Sediment-blood cells, rare leucocyte.

July 28. Drain removed. Testicle almost as small as the left one, and not tender. Temperature normal.

July 31. Discharged from hospital.

Aug. 2. Right testicle still slightly larger than the left. Cord slightly edematous.

There are a number of facts about the orchitis of mumps, in regard to its incidence, the side involved, etc., which have been worked out by Laveran and Catrin (v. bibliography) in the epidemics occurring in the regiments to which they were assigned. In brief, they found that in adults orchitis is likely to occur once in every three cases of mumps. It appears in from two to sixteen days after the beginning of the parotitis, usually between four and eight days after. There is no apparent relation between the side involved and the location of the mumps. In 43 cases, Catrin found 13 bilateral, 18 right, 12 left. The fever, according to Vedrennes, lasts from two to six days, usually falling by lysis.

It is not with such facts as these, which can be determined only by the observation of large series of cases, that this paper is chiefly concerned. I shall consider here the result of treatment and present a report of the pathology.

Dr. S. B. Wolbach, Assistant Professor of Bacteriology in the Harvard Medical School, for whose able assistance I am most grateful, reports as follows:

"A small piece of testicle tissue from the first case was preserved in absolute alcohol, embedded in paraffine and sections stained with eosine-methylene blue and Giemsa's stain. Two pieces of tissue, each including the tunica albuginea and five to six millimeters of testicle tissue, were saved from the second case; they were preserved in Zenker's fixative and alcohol corrosive, embedded in paraffine and sections stained with eosine-methylene blue and Giemsa's stain respectively. The two cases show identical processes. The following description is taken from the sections of the second case because the sections are larger and the fixation and strains more perfect.

"The process does not affect the testicle tissue uniformly. There are groups of seminiferous (convoluted) tubules which are completely destroyed and distended with exudate, separated by areas of normal and slightly affected tubules which contain large numbers of mitotic sexual cells, though few mature spermatozoa.

"The exudate in the destroyed tubules consists chiefly of polymorpho-nuclear leucocytes and phagocytic endothelial leucocytes. The cells of the tubules have mostly undergone a hyaline degeneration and are taken up by phagocytic endothelial leucocytes, though there are occasional perfectly preserved mitotic sexual cells scattered among the tightly packed exudative cells.

"The intertubular connective tissue everywhere is edematous and between the tubules most affected contains coarse, meshed fibrin, small areas of hemorrhage and many polymorpho-nuclear leucocytes and endothelial leucocytes.

"Among the groups of least affected tubules there are some with normal epithelium, but with lumena partly filled with polymorpho-nuclear and endothelial leucocytes, as if the process was spreading along the lumena.

"There are many more tubules, however, which show lesions involving a small portion of the circumference, where it appears as if the process was extending from the intertubular connective tissue. In these places numerous leucocytes are found in the act of migrating through the basement membrane of the tubules. These small lesions contain deeply staining hyaline degenerated sexual cells, hyaline fragments, polymorpho-nuclear leucocytes and endothelial leucocytes. The immediately adjacent epithelium is usually full of mitotic sexual cells showing the various stages of spermatogenesis.

"The tunica albuginea is edematous, and there are small hemorrhages and zones of cellular exudate about blood vessels. The cells about

blood vessels are polymorpho-nuclear leucocytes and endothelial leucocytes.

"Mitotic endothelial cells in the lumena of capillaries occur in the tunica albuginea and intertubular connective tissue.

"Liquefaction necrosis is not present either in the tubules or in the connective structures.

"No bacteria or other parasites can be found in the sections and in film preparations made at the time of the operation. Ordinary stains, Gram's stain and Giemsa's stain were employed."

The observation made by Dr. Wolbach that the process seems to spread partly by extension along the tubules may prove of interest when taken in conjunction with the clinical observation of several writers that the process appears to affect the epididymis first. In a few cases this organ alone has been involved. If it can be shown that the inflammation does begin in the epididymis, extending thence into the testicle by way of the ducts, it will be another demonstration of the contention of Belfield that the epididymis still retains a part of the excretory function which it possessed during fetal life.

As regards the bacteriology of mumps, there seems to be very good evidence that the organism is a diplococcus. Teissier and Esmein and Laveran and Catrin have isolated this coccus from a majority of the cases which they studied. Herb has reproduced parotitis by inoculation of dogs.

In both our cases, however, the blood cultures and the cultures from the hydrocele fluid and testicular tissue were bacteriologically negative. Inoculation experiments with incubated media are still in progress.

Success in the treatment of this disorder hinges upon the prevention of atrophy. With rest in bed, the acute symptoms will disappear in a few days, hastened of course by poulticing. Under such treatment, however, atrophy occurs in rather more than 60% of the testicles affected. (Laveran and Catrin's figures, based on 197 cases). Operation cannot offer a very great improvement in immediate results, for they will be good anyway. It must base its claim to existence upon the showing of fewer atrophied testicles, one year after their orchitis, than can be produced by the older and more conservative method.

It is with the hope that such statistics may be gathered that these cases are reported.

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Medical Progress.

PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

ECZEMA AND ITS TREATMENT.—ECZEMATOID RINGWORM.—CLINICAL APPEARANCES AND ETIOLOGY OF IMPETIGO CONTAGIOSA.—QUININE IN URTICARIA.—IODIDE OF IRON ERUPTION RESEMBLING SMALL POX.—TREATMENT OF RODENT ULCER BY FREEZING.—HYPERKERATOSES FROM GONORRHOEA.

1. ECZEMA AND ITS TREATMENT.

ALEXANDER (Charlottenburg) alluding to the newer methods of treating eczema, considers the light and ray treatment as one of the most important of recent innovations. The treatment of chronic eczema by the Röntgen-rays is (he declares) commonly considered today the best, surest and most convenient method, and has very considerably improved our resources for combating obstinate cases. The quartz-lamp is to be resorted to in rebellious cases, which have not yielded to the Röntgen-rays or to applications. The hot-air treatment of infantile eczema is also well spoken of. Although the writer seems very enthusiastic about the Röntgen treatment, he admits that there are many cases that prove rebellious to this method and that have to be handled with the old treatment by applications with its advantages and disadvantages.

Of the newer remedies, lenigallol is of great value in all stages of eczema, except the very acute. Galewsky has lately recommended it even in the obstinate cases of infantile eczema in 1–4–5%. Lenigallol is a derivative of Pyrogallic acid and is effective by its slowly drying action on the affected patches. It has the disadvantage of coloring the skin black when used for a long time. It is used by adding 2–10% to zinc paste, beginning preferably with the former strength.

Tumenolammonium, introduced by Neisser and Klingmüller, is used as an antipruritic in the proportion of from 5–10%.

Tar still remains the last resort in obstinate cases, in the form of tar ointments, tar paints and tar baths. The tar baths are difficult of application and have the disadvantage that it is impossible to treat in this way the affected part only. Coal tar has lately come into renewed use (Brocq, Jambon, Dind) and one great advantage lies in the great freedom from irritating qualities. It is contraindicated in cases where the skin is infected. A very good procedure is to begin with a mild lenigallol paste and lead up to a tar paste and finally pure coal tar.

The writer thinks that little advance has been made in treating eczema by dietetic régime. The theories of diathesis and autotoxic action from the intestinal tract, that may cause dermatoses, have little to recommend them. Finkelstein's "Ekzemsuppe" or "entsalzte milch" in the treatment of infantile eczema was hailed by many who had just had their turn in meeting