nately; has a quick pulse and hurried breathing, is not unconscious, and after the fit passes much urine of low specific gravity. These fits are as involuntary as an epileptic fit. But they are not peculiar to hysterical females. On the contrary, most hysterics do not have them. They are a result of neurasthenia; they occur in neurasthenic men as well as in women. Hysterical women may become neurasthenic, and then they get these seizures.

The conception of hysteria as a disease that can be identified by definite physical signs is a recent one. I have described those that are best and have been longest known, but an eminent neurologist tells me that new ones have recently been discovered. It follows that we have no knowledge as to whether hysteria is inherited or not. If we to-day meet a hysteric it is very improbable that either of her parents was ever tested for the hysterical stigmata. Nervous instability is known to be inherited, and the children of neuropathic parents will probably suffer from unwise training and bad example; but whether the particular form of nervous instability known as hysteria is transmitted as such I know not.

I know of no research that has been made as to the effect of age upon hysterical subjects—whether or not after the climacteric symptoms persist or disappear. I have mentioned the susceptibility of the hysteric to suggestion. The hysteric whose pelvic organs are perfectly healthy, but who thinks she has something the matter with them, has been made ill by suggestion, and is to be cured by suggestion. The cures of Christian Science are cures by suggestion. As to this, Professor Osler remarks: "The essentials are first a strong and hopeful belief in a dominant personality . . . an ordinary doctor has served the purpose of common humanity very well."

"Secondly, certain accessories—a shrine, a grotto, a church, a temple, a sanatorium—surroundings that will impress favourably the imagination of the patient." In the light of the papers referred to in the early part of this address, one may particularize further as to these accessories, and mention among them the operating theatre and the curette.

"Thirdly, suggestion in one of its varied forms." It is these essential points that make women, after a healthy uterus has been scraped out, think that they have been cured of something.

Let me briefly summarize the purport of this address. Hysteria and neurasthenia occur in both sexes and at all ages; but they are commoner in women than in men, and commoner in women during the years of potential child-bearing than before and after. Hysteria occurs in the strong; it is accompanied with deficiency in sensibility; and has no relation whatever to any disease of the reproductive organs except such as may have been suggested to the patient. Neurasthenia occurs in the weak, and is accompanied with oversensitiveness. It is often produced by long-continued pain; and, if so, is cured when the pain is removed. Neurasthenia from any cause makes patients more liable to reflected pain than they would be if in health.

In cases of pelvic pain it is most important, generally easy, but sometimes very difficult, to distinguish between that which is hysterical, and curable by suggestion; that due to neurasthenia, curable by rest and sleep; that due to psychasthenia, benefited by rest and sleep, but not curable by anything; and that due to local disease, to be cured by local treatment.

THE Morgue, which some time ago ceased to be one of the shows of Paris, is now doomed to disappearance. The destruction of the buildings has been decided upon by the municipal council. The new mortuary which is to take its place will be an annexe of the Medico-Legal Institute, which is to be erected in the Place Mazas. It is estimated that the building and installation will cost £40,000, of which the City of Paris has undertaken to find one-half.

THE Commissioner of Health of New York State has recently announced that preparations have been completed at the State Hygienic Laboratory at Albany which will enable the State to furnish free treatment for all suffering from rabies. The present system of sending patients to New York for treatment is very expensive, and it is believed that this money could be saved and treatment provided by the State for administration at home at a comparatively small expense.

THE ANTIFERMENT TREATMENT OF ACUTE SUPPURATION.

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IN 1906 Müller and Iochmann,¹ of Breslau, described a simple method of determining the presence of a proteolytic ferment in the polymorphonuclear leucocytes, and also of distinguishing coccal from tuberculous pus.

If coccal pus is dropped on a Loeffler plate, and kept at a temperature of 55 to 60° C., deep depressions form on the plate; when tuberculous pus is applied in the same way, it simply dries on the unchanged surface, no depressions being produced.

Müller² also suggested the employment of Millon's reagent for the same purpose. If a small, moderately deep porcelain glass is filled almost to the brim with the reagent, a drop or two of coccal pus let fall on the surface forms in the solution a deliquescent disc, and a few minutes later a red coloration appears; tuberculous pus produces a firm film, and no coloration.

The explanation of the difference of the results in the two kinds of pus is that in the former an albumen digesting ferment derived from the polymorphonuclear leucocytes is present; while in the latter the ferment is absent, because the leucocytes, which are its source, are more in the background in tuberculous inflammation, and the lymphocytes, which are mainly present, are not ferment producers. Further, if a little blood serum is added to the coccal pus, the reaction does not take place, which shows that there is an antiferment present in the serum which arrests the action of the proteolytic ferment.

An endeavour has been made to give a practical application to these observations in the treatment of suppurative processes, by bringing the antiferment of blood serum into antagonism with the proteolytic ferment of leucocytes and pus, in order to limit or arrest its power of melting down the tissues of the affected part.

Good results appear to have been got from the use of transudation fluids, containing the antiferment in natural solution, from the thoracic and abdominal cavities.³ Hydrocele fluid has also been used for the same purpose. Great pains were taken to render the fluids free from infection by filtering them through porcelain; nevertheless there are obvious objections to their employment, both real and sentimental.

There are also objections to the suggestion that has been made, to treat the patient with his own serum prepared from blood procured by the insertion of a cannula into a vein.

The serum derived from the lower animals is unsuitable because of its deficient antiferment content; but it has been found that the content can be increased by immunizing the animals with the ferment of human pus.⁶

Further investigations have shown that the leucocytic antiferment and antipancras-trypsin are evidently identical, and that in the preparation of the animals pancreas-trypsin, like leucocytic ferment, has the effect of increasing the antiferment to the extent of making it equal to that of the normal human serum.⁴ Accordingly Merck of Darmstadt uses pancreas-trypsin in the preparation of an animal serum, which he terms "leucofermantin." Such a preparation has obvious advantages if it can be shown to be as effective in its action as the human fluids that have hitherto been used.

TECHNIQUE OF THE TREATMENT.

What appears to have been chiefly employed by those who have written on the subject was the carefully prepared fluid from cases of hydrothorax and ascites.

The most suitable cases for the treatment are circumscribed abscesses with sharp limitation of the suppurative process, because it is essential that the antiferment should be brought into direct contact with the pus-producing surface; hence, in infiltrating suppurations the therapeutic effects, though sometimes good, are, as a rule, less favourable.

The earlier method in dealing with abscess was to empty its cavity by a small incision, to wash it out with the serum, to introduce a gauze tampon soaked with the same, and then to apply a moist aseptic dressing. The

same dressing was repeated on the following day, but generally in twenty-four hours the cavity was found to be free of pus, its surface dry or secreting only a watery fluid, and further antiseptic dressing was usually unnecessary; the wound could be treated as aseptic and healed quickly.

Latterly, Peiser of Breslau and Kolaczek of Tübingen have employed aspiration and injection of serum instead of incision.^{5,7} In suitable cases the method has yielded good results, and it has the special advantage of producing good cosmetic effects.

Subjoined are notes, drawn up by my house-surgeon, Dr. Cunningham, of a series of cases which I have treated by leucofermantin kindly supplied to me by Merck of Darmstadt. With two exceptions, they were dealt with by aspiration and injection. I used a fairly large needle, and, after evacuating the abscess, I injected and withdrew a small quantity of serum, so as to clean out the cavity as thoroughly as possible before making the final injection, which was allowed to remain; a moist aseptic dressing was then applied. If the aspiration had to be repeated, the needle was inserted through the old puncture, so as to save pain. The quantity of serum left in varied, according to the size of the abscess, from 2 c.cm. to 15 c.cm.

CASE I.—Mrs. M., aged 38. September 14th: Axillary abscess of fourteen days' duration. Aspirated; 2 oz. of pus withdrawn, and $\frac{1}{2}$ oz. leucofermantin injected. September 15th: Pain and tenderness very much diminished. Aspirated; 4 oz. reddish-brown fluid removed, and 2 drachms of leucofermantin injected. September 20th: Aspirated; some reddish-brown fluid removed. September 23rd: Abscess cavity obliterated.

CASE II.—M. R., aged 40. October 16th: Large, intensely red, tender and fluctuating swelling in left side of neck. Incised under ethyl chloride spray; large quantity of pus. Cavity irrigated with leucofermantin and lightly tamponed with gauze soaked in leucofermantin; aseptic dressing. Dressed in same way for next two days; only slight serous discharge, redness and tenderness gone; healed rapidly.

CASE III.—J. M., aged 18. November 3rd: Abscess of mamma. Aspirated; 1 oz. pus removed and 3 drachms leucofermantin injected. Slight serous discharge took place from the puncture for the next two days. November 11th: Recovery complete.

CASE IV.—J. M., aged 11. November 19th: Acute abscess in front of upper part of thigh, 3 in. in diameter. Skin over fluctuating area very thin. Aspirated; 1 oz. of pus withdrawn and 2 drachms of leucofermantin injected. Sterile gauze dressing. On the next two days some leucofermantin was injected through a small opening that had formed in the thinned skin. November 25th: Abscess quite healed.

CASE V.—J. W., aged 19. August 3rd: Axillary abscess. Aspirated; a considerable amount of pus drawn off, and 2 drachms of leucofermantin injected. August 6th: Diminution of swelling and redness; some fluctuation. August 9th: Quite recovered.

CASE VI.—Mrs. W., aged 33. November 23rd: Mammary abscess swelling 2 in. in diameter; 1 oz. of pus drawn off by aspiration and 2 drachms of leucofermantin injected. November 25th: Aspiration repeated; serous discharge; 1 drachm of leucofermantin injected. November 30th: Quite recovered.

CASE VII.—R. O., aged 14 years. September 16th: Mammary abscess; swelling, 2 in. in diameter; aspirated, a quantity of thick pus removed, and 2 drachms leucofermantin injected. September 17th: Swelling and redness diminished; syringed out through puncture with leucofermantin. September 20th: Recovered.

CASE VIII.—G. S., aged 37 years. December 15th: Cellulitis of front of upper part of forearm; area 4 in. in diameter; fluctuation; incision made 2 in. long and $\frac{1}{2}$ oz. pus evacuated; plugged with gauze soaked in leucofermantin. December 16th: Swelling and redness diminished; still some pus; washed out with leucofermantin and plugged with gauze soaked in the same. December 17th: Two small abscesses incised and treated in same way. Dressed with leucofermantin daily till December 22nd; there was then no discharge, and wounds were looking dry and granulating.

CASE IX.—T. E., aged 14. December 21st: Abscess of forearm 2 in. in diameter; skin very red and considerable surrounding infiltration; incision; irrigated and tamponed with gauze soaked in leucofermantin. December 22nd: Looking clean and dry; redness and pain gone. December 27th: Granulating wound nearly healed.

CASE X.—F. T., aged 2. November 26th: Acute abscess under chin. Aspirated; 1 oz. pus withdrawn; washed out with leucofermantin, then 2 drachms injected and allowed to remain; injection repeated four times at intervals. December 9th: Quite recovered.

CASE XI.—L. M., aged 5. December 11th: Abscess of arm. Aspirated; 2 drachms of pus drawn off; washed out with leucofermantin and $\frac{1}{2}$ drachm injected. December 16th: Quite recovered.

CASE XII.—A. W., aged 14. December 9th: Abscess on back of neck size of walnut. Aspirated, and $\frac{1}{2}$ oz. pus withdrawn; washed out with leucofermantin and 1 drachm injected.

December 13th: Swelling has nearly disappeared. December 16th: Quite gone.

CASE XIII.—B. W., aged 22. December 17th: Abscess of mamma, size of apple; $\frac{1}{2}$ oz. of pus removed by aspiration; leucofermantin injected, repeated twice. December 25th: Recovered.

CASE XIV.—M. F., aged 18. October 12th: Infiltrating supuration of mamma. Aspirated, and injected several times without improvement; Bier's suction treatment was then adopted with success.

CASE XV.—Mr. W., aged 25. December 18th. Large, red, tender, fluctuating swelling on right side of neck; aspirated and injected, 2 oz. of pus; repeated four times. December 30th: Nearly closed, small sinus with slight serous discharge; examination of pus showed a pure streptococcal infection, probably accounting for the resistance to treatment.

With the exception of Cases XIV and XV the results were highly satisfactory. Recovery took place sooner than it would have done under the ordinary treatment, and, in the aspirated cases, without any visible scarring—an important matter in abscesses occurring on the face and neck. In Case XV, even although the progress was slower, probably owing to the purely streptococcal character of the infection, recovery took place comparatively early.

In the two cases treated by incision the rapid drying up of the purulent discharge and cleaning of the wound were very noticeable.

I feel convinced, from my experience of the method, that the principle on which it is based is sound, and that it opens up a new pathway in the physiological treatment of suppurative inflammation.

The serum employed probably possesses bactericidal and other defensive properties besides its antiproteolytic power.

One of the many explanations of the beneficial effects of Bier's congestion hyperaemia in suppurative inflammation is that they are due to the flushing of the focus with transudation fluid from the distended vessels. Both methods therefore appear to attain the same object in different ways—in the one through the action of serum produced by physiological processes and reaching the part from within; in the other by direct application from without.

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OBSERVATIONS ON

THE VACCINE TREATMENT OF A SERIES OF CASES OF STAPHYLOCOCCIC INFECTIONS.*

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DURING the last few years I have taken special interest in the vaccine treatment of bacterial diseases, and have had the opportunity of treating a large number of cases of this kind. I have also had the opportunity of working in Sir A. E. Wright's laboratory and attending his clinics, and would like to take this opportunity of acknowledging the courtesy and kindness both of himself and his staff at St. Mary's.

In order to avoid confusion, I think it best to take a definite series of some one infection. At first I had intended to bring forward a series of some of the less common infections, such as local tuberculous lesions, chronic catarrhal conditions, streptococcal infections, or infections by *Bacillus coli*, but I decided to take staphylococcal cases only—first, because of their frequency; and, secondly, because several articles have recently appeared in the medical press tending to throw doubt on the efficacy of vaccine treatment in this condition.

The following cases are selected as illustrating different types, and are a fair sample of those treated.

CASE I.

Male, aged 19, complained of a very painful boil on his chin. Has had slight acne for some years but there is very little now. General health good. Boil incised; bacteriological examination

* Read before the Swansea Division of the British Medical Association.