The application of a spinal ice bag, of counter-irritation to the back, at the outset of the disease may have some tendency to check the exudation. Bearing in mind the toxic nature of the affection, and the good effects seen in multiple peripheral neuritis and retrobulbar optic neuritis (not infrequently seen after epidemics of influenza), large doses of salicylate of sodium and of iodide of potassium should be given, and the internal or subcutaneous administration of strychnine, even if spastic symptoms are present, may well be tried, though it should be given cautiously. The marked improvements which have been noticed after the administration of mercury in some cases where there was a syphilitic history may perhaps have been due to an antitoxic property of this drug, and it might, therefore, be tried in non-syphilitic cases. The same applies to arsenic and quinine. As arsenic, even when administered in medicinal doses, may occasionally produce peripheral neuritis, we should be careful in using it; on the other hand, the beneficial effects of arsenic in pernicious anæmia, where, as pointed out above, a disseminated myelitic affection has repeatedly been noticed, is a strong recommendation for a trial with this drug. Massage and electricity had better be deferred to a later stage of the disease.

EXPLANATION OF COLOURED PLATE.

Sections of the cord and optic nerve stained after Weigert's method (low power). Fig. 1. Cervical region. Fig. 2. Dorsal region. Fig. 3. Lumbar region. Fig. 4. Optic nerve. The areas of degeneration in the white matter are stained brownish yellow.

REFERENCES.

- ¹ Arch. d. Méd. Expér. et d'Anat. Path., 1889, No. 5. ² BRITISH MEDICAL JOURNAL, 1884, vol. i, p. 1151. ³ Arch. f. Psychiatrie, iv, 1874. ⁴ Arch. f. Psychiatrie, xvii, 1886. ⁵ BRITISH MEDICAL JOURNAL, 1886, ii, p. 923. ⁶ Arch. de Neurologie, 1890, vol. xix, pp. 56, 58. ⁷ Clin. Journ., vol. iii, p. 115. ⁸ Berl. klin. Woch., 1891, p. 761. ⁹ Schanz, Deutsch. med. Woch., 1893, p. 615. ¹⁰ Congress f. innere Medicin, 1891. ¹¹ Leyden, Deutsch. med. Woch., 1892, p. 650. ¹² Med. Chronicle, 1892. ¹³ Ebstein, Arch. f. Psych., vol. x, 1892, p. 494. ¹⁴ Deutsch. Zeit. f. klin. Med., vol. 23, 1893, p. 494. ¹⁵ Deutsch. Zeit. f. Nerven., 1893, p. 189. ¹⁶ Fuchs, D. Zeitsch. f. Nerven., 1893, p. 38.

A NOTE ON A NEW METHOD OF PREPARING CULTURE MEDIA.

By J. LORRAIN SMITH, M.A., M.D.,

John Lucas Walker Student of Pathology, University of Cambridge.

ONE of the chief sources of the difficulty which is experienced by bacteriologists in regard to the cultivation of pathogenic microbes lies in the fact that the composition of many of the media used for the purpose differs so widely from that of the blood and other fluids found in the animal tissues. By means of the method here described media can be prepared directly from these fluids by a process which reduces the difficulties of manipulation to a minimum.

The one perfectly satisfactory method of sterilising any medium is to raise it to the temperature of boiling water. What is required, therefore, is that from these fluids solid media should be prepared which are perfectly transparent and yet easily sterilised at 100° C. or over it.

Ordinary serum, when coagulated by raising it to the boiling point of water, forms an opaque mass. If on the surface of this the germ of anthrax be planted, it grows with the greatest readiness. As the germ continues to grow, it can be observed that in the layer of the coagulum immediately in contact with the anthrax the opacity begins to disappear. This change proceeds till finally there remains in place of the opaque mass a clear transparent jelly. The most probable explanation of this change is that it is due to a body of an alkaline nature which diffuses into the medium and combines with the proteid. We are already acquainted with a form of proteid, first described by Lieberkühn in 1848, which closely resembles this substance; it is known as "Lieberkühn's jelly," and is formed by adding potash to egg white. By this means he obtained a solid and very insoluble proteid in the form of a clear jelly. It was pointed out by Lieberkühn that if this alkali-albumin be washed till the free alkali is completely removed, it has a neutral reaction

to litmus. According to Mörner, who has more recently investigated the question, the reaction is weakly acid. It is important to bear this in mind, because it shows that in the process of combination with the proteid, the alkali disappears. If, therefore, we add to a solution of proteid such as a tissue fluid, a quantity of free alkali just sufficient to form the combination, we do not seriously alter the weak alkaline reaction which it normally has. In any case, the amount of alkali needed to prevent the occurrence of opacity in coagulation by heat is very small.

A fact illustrating the ease with which the opacity may be prevented in coagulation is that if serum be in a sufficiently thin layer in a glass vessel, the result of raising it to the boiling temperature is a clear jelly. The rule for a method of solidifying solutions of proteid in a clear form must be to add an amount of alkali which is just sufficient to discharge opacity. If we add to ox serum 0.1 per cent. to 0.15 per cent. caustic soda, and heat the solution to 120° C. in the autoclave, we obtain the desired transparent jelly. Too little alkali gives a coagulum with a greyish appearance. Care must be taken to have clear serum, and in particular it must be free from hæmoglobin. The amount of alkali required varies a little with the character of the serum. In regard to egg white the same facts hold. Here, again, the amount of alkali to be added depends on the nature of the egg used. Certain kinds of eggs coagulate in a fairly transparent form without any addition.

In the case of the hen's egg the following method has been found reliable. Break up the white with an egg beater till it loses its consistency. Add to it 40 per cent. of water, and mix well. Pass the mixture through muslin to remove any shreds of insoluble material, or let it stand overnight in a cylinder till these settle to the bottom. Add 0.1 per cent. caustic soda, and solidify in the autoclave. Egg white is naturally more free from pigment than serum, and with a little care in clearing it a jelly can be obtained closely resembling gelatine in transparency. Substances like glucose may be added as desired.

In regard to the question of growth, experiments have been done to show that a large variety of bacteria grow on this medium with great readiness. The effect of the alkali on the pathogenic character of the bacteria or their products has not been to any extent determined. A few preliminary experiments on the diphtheria bacillus seem to indicate that virulence is maintained as efficiently as in the case of agar or beef-broth cultivations. It may also be noted that alkali albumin in the liquid form has been extensively used as a culture medium. The ease with which the solid form can be prepared renders its introduction desirable.

HOSPITALS AND BACTERIOLOGICAL STATIONS IN TURKEY.—The Sultan of Turkey has decreed that each of the ten municipalities of Constantinople is to be provided with a hospital with a sufficient staff in order that day and night a medical man may be in attendance. A great many have what is called a hospital, organised in a private house, therefore very imperfectly. The Constantinople Bacteriological Laboratory is finished and will soon be opened; analyses of water and food will be made in it. The Bacteriological Institute has received a grant of fr. 480, and will receive an annual income (fr. 320). Hydrophobia patients will be treated at Stamboul at a hospital which will be built for the purpose with a bacteriological laboratory attached to it; meanwhile, the Constantinople institute will receive patients from all parts of the Turkish Empire.

MEDICAL EDUCATION FOR WOMEN IN RUSSIA.—The question of the establishment of the proposed school of medicine for women in St. Petersburg will shortly come before the Imperial Council. An endowment sufficient to produce a revenue of 63,000 roubles (£6,300) a year is required. Of this revenue only 42,000 roubles can be counted on. The city of St. Petersburg has promised a subvention of 15,000 roubles annually, and the rest is made up from legacies and funds supplied by private persons. Apparently the State does not see its way to unloose its purse strings. The Municipal Council has given a site for the building, and the city hospitals have promised to throw open their wards to the female students.