

*Cholesterin in the Cerebro-spinal Fluid of Paralytically and its Participation in the Reaction of Wassermann [La colesterina nel liquido cefalo rachidiano dei paralytici e sua partecipazione alla reazione di Wassermann]. (Extract from Reforma Medica, anno xxv, No. 3.) Pighini, G.*

In a recent work, Pighini has demonstrated that cholesterin has, in an emulsion of nervous substances, the property of hindering the hæmolytic properties of lecithin and specific sera.

Starting with the hypothesis that in the cerebro-spinal fluid of general paralytically and in extracts of syphilitic foetal liver the antibodies and antigens in the well-known phenomena of Wassermann contain as their chief elements cholesterin, the author has made a research embracing the examination of various ependymal fluids and sera in several mental diseases.

Cholesterin is present in alcoholic extracts of the liver of a syphilitic foetus in much greater quantities than it is in the extracts of normal liver. Traces of cholesterin are present in normal blood, and are probably derived from the destruction of red blood-corpuscles, the stroma of which contains it in notable quantity. The amount diffused normally by blood ought to be slight. In ethereal extracts of 20 to 30 c.cm. of serum, the author has not succeeded in showing its presence, either by Liebermann's reaction or by microscopical examination for crystals. Cholesterin is not normally present in cerebro-spinal fluid; when present it is pathological.

The method followed in the researches is the following: Eighteen to 20 c.cm. of cerebro-spinal fluid, or of serum, are extracted twice with ether, using a glass vessel. The ethereal residue is disengaged by boiling in absolute alcohol, and saponified by shaking in sodium alcoholic solution (1 gr. of metallic sodium in 20 of absolute alcohol). The alcohol is then evaporated, salted water is added and mixed, and the liquid is evaporated to dryness. As a result salts are precipitated, which are powdered with a pestle and completely dehydrated *in vacuo*. The extracts are now placed in a Soxhlet apparatus and equal parts of absolute alcohol and ordinary boiling water are added. This mixture is reduced to small volume and left to crystallise slowly. In the alcoholic extracts thus obtained an oily, yellow substance is always present, which has avoided saponification, and which smells strongly of paracresol. It is soluble in all the solvents of cholesterin. When in small quantities it does not disturb the reaction and crystallisation. It is a substance, or rather, a mixture, which has been demonstrated chiefly by Panzer in his process of isolating cholesterin from various pathological organs. If it is desirable to avoid this in great part it is necessary to clear with neutral acetate of lead.

Cholesterin, when it is in sufficient quantity, is precipitated in long rhomboidal crystals, with characteristic angles—76·3 or 87·3—or else in small traces (0·001), with the reaction of Liebermann. When it is not possible to obtain at once a sufficient quantity of cholesterin, such as can be demonstrated microscopically, satisfactory results, especially for serum, may be got from the reaction of acid anhydride.

The cases investigated were ten of progressive paralysis, seven of

dementia præcox, five of epilepsy, two of apoplectic dementia, two of pellagra, two of moral insanity, and one case of alcoholism recovered.

The researches show—

(1) That normally cholesterin does not exist in the cerebro-spinal fluid and in the serum.

(2) Eight out of ten cases of general paralysis had cholesterin in the ependymal fluid, *i.e.*, 80 *per cent.* In five of these eight, crystals were demonstrated. In the two cases with negative results, the paralysis was of many years' standing, and in the last phases of the malady. In the serum the research was positive in 90 *per cent.* of the cases.

(3) In seven cases of dementia præcox, five, or 57 *per cent.*, showed cholesterin in the cerebro-spinal fluid. In the serum it was not demonstrated in any case. The reaction is more intense in catatonic forms, and in these cases crystals are very easily obtained.

(4) Five cases of epilepsy were examined, and a positive reaction was obtained in three cases, 60 *per cent.*, both in the cerebro-spinal fluid and in the serum. All three cases were those of marked epileptic dementia, or approaching dementia, and in which fits occurred daily.

(5) In the two cases of apoplectic dementia and in the two of pellagra, negative findings resulted in the cerebro-spinal fluid as in the serum.

Pighini's conclusions are that cholesterin is present as a pathological constituent in the cerebro-spinal fluid of cases of progressive paralysis, grave cases of dementia præcox and of epilepsy. It may also be present in abnormal quantities in the serum of general paralysis and marked epilepsy. It is probable that the prevailing active substance in the alcoholic extracts of the cerebro-spinal fluid and serum used in the researches of Wassermann is cholesterin. HAMILTON C. MARR.

*A Contribution to the Serum Diagnosis in Syphilis [A proposito di "una propaggine della sierodiagnosi della sifilide"]*. (*Riv. di Patol. nerv. e ment.*, vol. xiv, Fasc. 7, 1909.) Tommasi, C.

This paper deals with the method of Campana, which suggests as a specific reaction in syphilis with active manifestations special phenomena which are obtained from urine mixed with lecithin (when the urine does not contain albumen or mucus).

Campana's method: To 10 c.c. of fresh morning urine, filtered and collected in a well-cleaned glass, 20 drops of 1 *per cent.* suspension of lecithin are added. The urine is then agitated with a clean glass rod, which is moved rapidly from the top to the bottom of the glass until a homogeneous mixture is obtained. Three c.c. of a mixture of absolute alcohol and sulphuric ether, recently prepared, is added and mixed in a similar manner. The glass is then put vertically on to a support. It is noticed that the ether at first rises to the surface, and, if the urine is normal, the mixture remains opalescent. If the urine is that of a syphilitic person with active manifestations it changes colour, either suddenly or in from fifteen to thirty minutes. It is also more limpid and transparent. The reaction in this case is positive in nine times out of ten.

Tommasi has used the method in twelve non-syphilitic, in eight syphilitic cases, and in ten cases of general paralysis. He finds that