

Differential counts of the living supravitaly stained cells from freshly drawn fluids other than blood were made in selected cases at the Harriet Lane Home, Johns Hopkins Hospital, Baltimore, through the courtesy of Dr. E. A. Park. For example, complete cellular studies of blood and spinal fluid were made in one infant under 1 year with generalized tuberculosis and meningitis. In the peripheral blood there were 47% neutrophilic leucocytes, 11% lymphocytes, 40% monocytes and 2% epithelioid cells. The ventricular fluid was clear with 450 cells and the centrifuged sediment showed 10% neutrophilic leucocytes, 46% small lymphocytes, 2% intermediate lymphocytes, 6% young monocytes, 20% monocytes, 5% epithelioids, 2% Langhans giant cells, 3% clasmatocytes, 2% serosal cells, 1% neutrophilic myelocytes, and 3% degenerating cells. The 2 giant cells had 5 and 7 nuclei respectively arranged peripherally around a central rosette of neutral red bodies. Other tuberculous spinal fluids have shown similar trends with epithelioid cells present, in contrast to the cellular findings in meningeal irritations of other etiology, as for example pneumococcus meningitis. It is essential that the studies be made within 20 minutes after withdrawal of the fluid to be examined as degenerative changes occur very rapidly rendering identification of individual cells impossible. These observations suggest the importance and possible value of careful studies of the cells in serous exudates and fluids from cases with questionable or obscure diagnoses.

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**Is the Sensitizing Effect of Cholesterol for the Antigen Used in the Complement-fixation Test for Syphilis Due to the Contaminating Sterol, Ergosterol?**

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Cholesterol as ordinarily prepared is now known to be contaminated with another sterol of an unsaturated and labile type of which ergosterol is the only known representative. Moreover, it is because of this contaminating sterol, ergosterol, that after irradiation with ultra-violet light, cholesterol acquires antirachitic properties. After removal of ergosterol, cholesterol is inert, following irradiation.

Professor Knudson of the Albany Medical College very kindly

offered a supply of relatively pure cholesterol and ergosterol and suggested that a comparative study be made to determine whether the sensitizing action which cholesterol has upon the antigen used in the complement-fixation test for syphilis is also due to the presence of the contaminating sterol, ergosterol.

The antigen used was an alcoholic extract of dried, ether-extracted beef heart tissue. A comparison of the activity of the untreated antigen and of the antigen sensitized with the different samples of cholesterol and ergosterol used was made in a series of complement titrations carried out in the presence of antigen alone, serum alone and combinations of normal serum and antigen and syphilitic serum and antigen. With a few normal and syphilitic sera the relative differences in specific activity of the sensitized and unsensitized antigen were thus made apparent and the results further confirmed by comparative complement-fixation tests of the sera from 44 persons having syphilis and of 9 sera from apparently healthy individuals.

In these experiments, the sensitizing action of a sample of cholesterol which was purified by the dibromide method to remove the contaminating sterol, ergosterol, was found to be practically equal to that of the unpurified sample. Moreover, ergosterol alone in the amounts in which it might be present as a contaminant of cholesterol, namely, 0.0002% to 0.02%, had practically no sensitizing action. It appears, therefore, that the sensitizing action of cholesterol, as ordinarily prepared, on antigens in the complement-fixation test is not due to the contaminating sterol, ergosterol.

However, it was interesting to note that ergosterol in larger amounts, 0.2%, had a definite sensitizing action upon antigen, equal in degree to that of equivalent concentrations of the relatively pure cholesterol. Ergosterol, however, was less soluble than cholesterol and its range of usefulness as a sensitizing agent was therefore more limited.

Irradiation with ultra-violet light had no effect upon the sensitizing activity of either cholesterol or ergosterol.