The most important diagnostic aid is the spinal fluid examination. In the majority of instances, this is pathological. It is generally under high pressure and contains, in their recent series of cases, from 34 to 1,980 cells average about 300) from 60 per cent. to 90 per cent. of which are polymorphonuclear leucocytes. Within a week after the onset of the paralysis, this cell count has diminished, and mononuclear leucocytes have largely replaced the polymorphonuclears, and in two or three weeks the cells disappear. The globulin is slight at first and increases in inverse proportion to the cells up to the third or fourth week.

There are other conditions in which the spinal fluid shows a picture closely resembling that of poliomyelitis, but if stained specimens of the spinal fluid sediment are examined to rule out the various forms of bacterial meningitis, and if the clinical picture is carefully considered, the error in diagnosis will be very small.

Dr. Peabody says the Harvard Infantile Paralysis Commission has had excellent success in using the method of lumbar puncture for diagnostic purposes, and he believes that in the preparalytic stage, it should be done quite generally, especially during an epidemic. When more efficient treatment is found, he believes very general use should be made of this method.

SECONDARY INFECTIONS—RELAPSES—ATTITUDE OF THE LAITY TOWARD THE DISEASE

By Edward W. Taylor, M.D.

According to a recent definite statement by Dr. Flexner, one attack of poliomyelitis confers permanent immunity. Dr. Taylor's personal observation, with a review of the literature, appears to show that this is not necessarily the case. He detailed the history of a boy who, at the age of three, had a typical attack with subsequent severe paralysis, affecting chiefly one leg. He recovered in great measure, with, however, considerable persistent weakness of the affected leg. Three years later he had a precisely similar attack with paralysis affecting chiefly the leg not previously involved. The evidence is strong in this case that the child had a definite reinfection.

In general, the weight of opinion has been against the theory of a secondary infection, following the analogy of certain well-understood infectious diseases, but sufficient cases are on record to render it altogether probable that in rare instances a true second attack may occur. For purposes of classification, cases may be grouped roughly as follows: (1) Paralysis occurring suddenly without definite prodromata or prodromata of a vague sort; (2) acute illness, such as tonsillitis, with apparently complete recovery, followed in a week or ten days by a recrudescence of symptoms and paralysis; (3) relapses, or cases in which the original paralysis is followed in weeks to months by extension of the paralysis; (4) definite second attacks occurring at least one year and perhaps many after the original infection. This last type appears to result from a definite reinfection rather than from a recrudescence of the activity of the virus. Reinfection appears, therefore, in rare instances to be a much more likely hypothesis than the persistence in the body of the original infecting agent and especially is this true of the instances in which years elapse between the two attacks. The case reported by Drs. Osgood and Lucas in 1913 was discussed at some length. In this case there was evidence that the virus was harbored in the nasal pharynx for upwards of two years and appeared to give rise to a secondary attack without reinfection. This case is unique and tends to support the theory that under certain circumstances the virus may retain its activity for long periods of time, even to the point of inducing an apparently secondary independent attack.

In respect to the attitude of the laity, Dr. Taylor pointed out the grave apprehensiveness with which the laity regard the disease, and raised the question of how far it is advisable to curb this attitude. Many believe it wise to take every conceivable precaution, because we know little about the transmission of the disease. We do, however, know much about the disease, though in a negative way. We know there is little evidence in favor of the direct transmission theory by contact, and because we do know this, many of the precautions now taken are absurd. If we really do believe the disease to be highly contagious, we should urge much greater precautions; if we do not believe it contagious, we are inconsistent and are not doing justice to the community when we lay down restrictions in which we do not believe. We should attempt to mould public opinion into accord with our knowledge and beliefs.

OBSERVATIONS DURING THE PRESENT EPIDEMIC

By Edwin H. Place, M.D.

Dr. Place read statistics compiled from 200 cases of poliomyelitis during the present epidemic. Figures regarding incidence according to age showed that 90 per cent. of cases were under 5 years of age, 6 per cent. from 5 to 15 years of age, and 4 per cent. over 15 years. The mortality was highest in the 4 per cent. group, being 45 per cent., next highest in the group of 1 to 5 years, and next highest in cases under 6 months. The total mortality has been 19.5 per cent. The mortality figures were notably higher during the first half of the epidemic than during the second half. Lately it has been 15 per cent. Dr. Place then analyzed the cases according to the site of paralysis. There were 16 cases of facial paralysis, 7 of upper arm alone, 10 of one arm alone, 10 of lower leg, 18 of one whole leg, 20 of both whole legs. In 5 cases the palate was involved, in 2 cases there was both facial and palatal involvement. There were 6 cases of faucial paralysis, one case of abducens paralysis, one of ocular motor paralysis among these cases. There was ataxia without paralysis in 2 cases. Several cases showed spasticity without paralysis. The fifth and twelfth nerves were not involved in this series of cases. There were no polyneuritic cases. Dr. Place spoke of the negative results in the treatment of the disease by adrenalin, horse sera, salvarsanized serum, and diphtheria antitoxin. Of the 16 preparalytic cases which were not treated, 1 developed paralysis. Of 8 cases treated with immune serum 3 developed paralysis. The serum was given in 10 c.c. doses 2 to 3 times in 24 hours. Of 40 cases treated with immune serum, 52 per cent. died; in 33 per cent. there was extension of paralysis, and in 15 per cent. there was no extension. However, chiefly the most desperate cases were treated with serum, which may explain the poor results.

Dr. Robert B. Osgood stated that Dr. Lucas and he had been unable to transfer poliomyelitis from monkey to monkey by most intimate contact. He mentioned a personal case referred to by Dr. Taylor which would seem to show that a child who had harbored the virus in a profuse nasal discharge for several years had transferred it to his sister through contact from bed linen soiled by the nasal discharge. While believing thoroughly in the wisdom of taking every precaution against contagion by contact, he said he saw no reason why we should forsake an impression gained by years of clinical experience, that the disease was rarely contagious in the ordinary sense. He emphasized the needlessness of many of the deformities following poliomyelitis if preventive measures were instituted and urged early orthopedic supervision for the prevention of these deformities.

Dr. Eli Friedman spoke of the importance of the examination of the