

ation may transmit their temperament to offspring in a more intensified form, and in the second or third generation, if there is no cross by which it may be by chance corrected, a neurotic heredity or predisposition is established, from which may come with slight exciting cause some form of mental degeneration, acute insanity, epilepsy, etc. In-breeding of temperaments, then, rather than consanguineous in-breeding, is more conducive to the development of the neuroses, to eccentricity and insanity of the degenerative type.

In the discussion of heredity in its relation to insanity and idiocy an attempt is made to show the diversity of facts and views that exist, that there is often a personal element that enters in the preparation of statistics, that are limitations of our knowledge; also, to formulate an expression of views or principles which are now presented as conclusions:

1. Physical characteristics, those distinguishing the human species, are transmissible as an inheritance.

2. Knowledge, genius, and culture are not an inheritance, but depend rather on influence, education and environment. Mental receptivity is transmissible. Psychological qualities are not necessarily an inheritance requiring favorable surroundings and circumstances for growth and development.

3. Insanity as a disease is not transmissible by inheritance, but may be acquired or evolved from a neurotic heredity as a basis.

4. A neurotic predisposition is transmissible by inheritance, but there is no absolute rule that it will be transmitted in any given case, or in any case.

5. In-breeding of neurotic temperaments is most conducive to the creation of a neurotic heredity.

6. Idiocy and imbecility may be a defect, having an origin in consanguineous marriages, prenatal condition, accidents, arrested developments, infantile meningitis, tuberculosis and lack of potency on the part of one of the parents from unexplained causes.—John B. Chapin, M.D., in *Times and Reg.*

## THE THEORY AND PRACTICE OF PROTECTIVE INOCULATIONS.

Dr. Klein delivered a lecture on this subject at the London Institution, Finsbury-circus, on Monday, March 4th. Starting with the axiom that "the more accurately we know an enemy, the more easy it is to overcome him," Dr. Klein said it nowhere more adequately applied than in the prevention and treatment of disease. Since it had been conclusively shown that communicable diseases were caused by specific parasites which

elaborated within the body specific poisons called "toxines," causing the particular symptoms of the disease, it had become possible to study more accurately these causes of disease and devise better means by which the life of the parasites and the action of their toxines might be inhibited or altogether destroyed. The treatment of infectious disease had been greatly advanced, and although some of these disorders were still in a stage of generalities, far-reaching changes had taken place in others. The system of antiseptic surgery discovered and applied by Sir Joseph Lister—instrumental in reducing the mortality of surgical operations, once very high, to an almost nominal figure—and the exact knowledge we now possessed of the propagation and spread of cholera and typhoid fever by means of water, milk, and other articles of food were cases in point. Scientific medicine, in contradistinction to empirical medicine, had acted on the more rational axiom that "he who cures may be the cleverer, but he who prevents disease is the safer physician," and had gradually unravelled the complex problems of the nature and cause of diseases, and in many instances devised means of preventing communicable disease. Dr. Klein then referred to the remarkable achievements that had been made in general sanitation and in the direct prevention of disease by means of protective inoculation, of which Jenner's discovery of vaccination was the earliest example. In all civilized countries and among all civilized peoples the protective power of vaccination against small-pox had been amply confirmed and established. Two points were particularly worth considering—(a) was vaccinia or cow-pox a modified or attenuated form of human variola? or (b) was it a separate and specifically different disease? With regard to the first point, most pathologists and sanitarians agreed with the original proposition enunciated by Jenner—namely, that vaccinia or cow-pox was a mild form of small-pox in the cow, and just as an individual who had passed through one attack of small-pox was furnished with resistance and immunity against a second attack, so also an individual who had been successfully vaccinated has practically passed through a mild attack of localized variola, was therefore possessed of immunity against a second attack, and was protected against small-pox. In some other infectious diseases—scarlet fever, measles, and whooping-cough—one attack, however mild, furnished, as a rule, immunity against a second attack. This was acquired immunity, as distinct and different from natural immunity, as, for instance, the natural immunity of most young children against typhoid fever or cholera, and of many adult persons against measles. With regard to the second point, many pathologists, while recognizing the protective power of vaccinia against small-pox, did not admit that cow-pox