

until now always been decided in the negative, as the inoculation experiments made by Campana and others have invariably failed. In September, 1884, Dr. Arning inoculated a Hawaiian convict, Keanu, previously free from all leprosy taint. This man had been condemned to penal servitude for life, and special care was taken that he should not be exposed to contagion by contact with other lepers. For a long time this experiment was regarded as a failure, but a few months ago (about four years after inoculation), Keanu developed unmistakable signs of tubercular leprosy and was sent to the leper settlement at Molokai. Upon the occasion of my recent visit I excised a small subcutaneous tubercle and a portion of the overlying skin. Numerous sections of this specimen were made by my associate, Dr. Fordyce, and in all, the presence of bacilli was demonstrated.

We know, further, that leprosy has a prolonged but somewhat indefinite period of incubation, a slow and irregular course of development, a characteristic and well-defined symptomatology rendering its diagnosis easy, and that its prognostic significance is most grave: it progresses almost invariably to a fatal termination. The period of incubation of leprosy is generally placed at from three to five years. Examples have been recorded in which this period has been materially lessened or prolonged to seven, ten, and even fifteen years or longer, depending largely upon individual capacity of resistance.

A belief in the contagiousness of leprosy has been universally held from the earliest ages until with recent times. All the prophylactic measures contained in the Levitical regulations, as well as those enforced in mediæval times, for the suppression of the disease, were based upon the recognition of the fact that every leper was a possible source of danger to all with whom he came in contact.

About thirty years ago the contagiousness of leprosy began to be questioned, and in 1867 the Royal College of Physicians of London formulated the dogma that leprosy was not a contagious disease. This opinion was generally accepted by the profession in Europe, although it may be said that the dermatologists of this country have never

subscribed to this doctrine. In 1885, when the famous discussion upon the contagiousness of leprosy took place before the French Academy of Medicine, it transpired that only three physicians in France upheld the doctrine of contagion. In 1888, when this discussion was again reopened, the partisans of contagion were much more numerous.

It is probable that in the immense majority of cases the disease is propagated through sexual intercourse, and also, that the virulent principle of leprosy may find entrance to a healthy organism through cracks, fissures, or abrasions of the integument or mucous membranes. It may possibly be inoculated by means of the bites of insects, such as flies or mosquitoes, or by animal parasites, such as the *Acarus scabiei*. Inhalation is an assumed mode of contagion, but it rests upon presumptive rather than positive proof. Vaccination is believed by the natives as well as by many intelligent physicians to be a potent agency in the rapid diffusion of leprosy through the islands. It must be remembered that until recently vaccination was performed by unskilled persons, human virus was used, and no distinction was made between a healthy person and a leper as the vaccinifer. The fact is incontestable that, after the general vaccination of natives, numerous leprosy centres developed in various parts of the islands where the disease had previously been unknown. Arning demonstrated the plentiful presence of bacilli in the lymph and crusts of vaccine pustules in lepers.

The belief in the hereditary transmission of leprosy has rarely been questioned. It has generally been regarded as the principal mode of the propagation and perpetuation of the disease. In all ages and in all countries marriage has been prohibited between lepers. The history of the development of leprosy in the Hawaiian Islands would seem to show that here at least heredity has played an insignificant if not an inappreciable role in the propagation of the disease.

My observations would seem to justify the conclusion that the influence of heredity in the transmission of leprosy must be