

modern science in respect of vaccine production, but most of them are hampered by the conservatism and laziness of the physicians, that is to say, the demand for an inferior article by the medical profession renders it commercially impossible to supply only that which is best.

The evidence that glycerinized lymph is in all desirable qualities equal to that conveyed on dry points—which is non-glycerinized—and that in respect of the number of adventitious organism, contained, it is incomparably better, is irrefutable. In spite of this we are informed that a large part of our profession, objecting to the time necessary for vaccination with the glycerinized material, insist on having dry points as more convenient to use. It is not creditable to us as a profession that we should be behind the producer in supporting a forward movement. In what follows we shall attempt to describe modern methods of securing vaccine, and also demonstrate that the conclusions reached are correct.

(a) *Animals*.—The practice in regard to animals selected for propagation of vaccinia varies. Whilst in all of the institutions mentioned above as having been visited by the writer, young animals only are seen, the age limits run from five or six weeks to twelve months or more. In two of these places milk fed calves are made use of, in one of them the milk is sterilized before feeding. The lymph secured from any of these animals is undoubtedly potent. Practical experience has proved this. It is argued that milk fed calves only should be employed in propagating vaccine, because

1st. They can be more easily handled than larger animals.

2nd. They are less likely to suffer from tuberculosis.

3rd. Being fed on milk only there is not the risk of tetanus germs reaching the lymph that there may be in hay fed animals.

With the first statement we have no concern; it is a matter for the producer only, but the second and third touch matters of importance to everyone.

The natural and strong reply to these arguments is that neither tuberculosis nor tetanus has ever been proven to have followed the use of lymph, from animals either large or small, and that quite sufficient guarantee against them is afforded by the use of tuberculin in testing the cattle and in the subsequent bacteriological and physiological tests of the lymph before marketing it. In deciding the question, it seems to us that we must keep in sight not merely the production of a sound lymph but also the interests of vaccination itself. If any steps seem theoretically to place the manufacture of any product on a more perfect footing, and we believe that product to be necessary for the well-being of the community, then we ought to take