

lymph which has been stored for weeks in a drug store used by the practitioner as if it were an inert mineral drug, incapable of change; and while, in a surgical operation of another kind, the practitioner may carry out aseptic precautions to an almost absurd extent, he will invade the uncleansed epidermis with, perchance, an unclean scalpel, and, after scarification, leave the unprotected wound to its fate, with an unthinking disregard of whether its course may be normal or a dangerous secondary infection supervene. In all this the personal elements as regards scientific knowledge and personal responsibility from the ethical standpoint are points which perhaps it would be too much to make the State responsible for; but if the credit of vaccinatic is to be lessened or a single person injured by the operation, then it is clearly the duty of the State to allow such compulsory work to be performed only by responsible, trained, public vaccinators, and to establish heavy penalties, as is done in Germany, for any unqualified person performing the operation, or for proved carelessness on the part of a public vaccinator.

It is apparent that to institute such a system legislation of a kind similar to that of England and Germany would be essential. In England, and especially in Germany, compulsory vaccination is accompanied by provisions for the production of vaccine by State establishments, where the responsibility for the production of tested lymph properly rests, and whence lymph is supplied to qualified public vaccinators, appointed by the municipalities. The system further provides for the regular and systematic vaccination of infants, and of vaccination on entrance to the schools and to army and navy. Such desiderata are making themselves felt more and more on this continent, where increasing urban populations and the facilities for the transmission of infection through the extending travel by railways, are yearly becoming greater.

With regard to the individual responsibility for unfortunate results of the operation, but little need be said. If the vaccinator does not warn the patient of the precautions to be taken we may expect that the latter too frequently, through ignorance, will be lacking in a knowledge of the care necessary to protect himself. He ought to be taught to know that he is inoculated with a disease, and that for the short time required, he must consider himself a patient. In the 1900 report of the medical officer in charge of the vaccinations at the National Vaccine Establishment, London, we are informed that out of 1,892 primary vaccinations, eleven on subsequent inspection showed some abnormal course, most of which consisted of "sore arm," caused by *domestic maltreatment*.