

the two forms of vaccination, we now proceed to give the reasons for our preference for the dry crust.

1. In vaccination with the crust, particularly if done by scarification, failures are infrequent; indeed exceptional; whereas with lymph they are exceedingly common, as any one who has read the English medical journals for the past five years cannot have failed to discover.

2. Lymph virus deteriorates more readily and is not so easily kept as the crust. Dry lymph, when used from tubes or points, almost invariably fails. There can be no doubt about the deterioration of lymph. Dr. Short, the Superintendent of the Madras Presidency, in an article in the "Madras Journal of Medical Science," says that this fact is evidenced by the more rapid course of the vesicles and the occurrence of extensive local irritation.

3. Lymph taken from the arm at an early stage of the vaccine disease, before fever has set in or constitutional symptoms have fully manifested themselves, does not contain those morbid elements necessary to protect the system from variola; whereas in the dry crust these elements are found in an active and concentrated form. If this view be correct, it affords an explanation of the European system of vaccination. In England they take lymph from the arm before the areola commences to form, indeed frequently as early as the fourth or fifth day. Doctor De Hoval, in a communication to the "Lancet," says the earlier the period the better: and in the instructions published by the Lords of Her Majesty's Privy Council for the guidance of the profession, we find the following clauses: "7. Take lymph on the day week after vaccination, at the stage when the vesicles are fully formed and plump; but when there is no perceptible commencement of areola." Clause "8. Consider that your lymph ought to be changed, if your cases, at the usual time of inspection on the day week after vaccination, have not, as a rule, their vesicles entirely free from areola." Here then the old-fashioned, much-prized areola test, to which Jenner himself attached so much importance, is not only ignored but condemned, and a vesicle selected concerning the character of which there can be no certainty. In Paris, the employment of lymph furnished by M. Lanoix, during the late epidemic, proved almost an absolute failure, and even pure animal lymph was unsuccessful in twelve of thirteen cases vaccinated by Doctor C. Paul, at Hospital Beaujon.

4. Sequelæ of an unpleasant character frequently follow lymph vaccination; whereas with the crust they are exceptional. In three thousand cases of vaccination by the crust in our own practise, only one single case of local irritation of an unpleasant character occurred. This point is not sufficiently regarded. Evidences of an unhealthy condition of the vaccinefer's system can be readily detected by a careful examination of the growth and maturation of the pustule; but where lymph is taken from the arm at an early day, no such evidences can possibly be diagnosed.

5. Vaccination by lymph does not protect the

patient, but necessitates a re vaccination; whereas a true vaccination by the crust affords thorough protection. In a late number of the "the editor says, that re-vaccination is urgently necessary; and Mr. Marson reports that in 751 cases admitted to the small-pox hospital, 618 or 82 per cent. were in vaccinated persons. We are convinced that no such result could follow in this country. A genuine vaccination here, in our judgment, affords as much protection as variola itself.

The reasons that have been urged against the employment of the crust are very trivial. The theory that blood may be taken up and constitutional diseases propagated by its use, as suggested by Doctor Anstie, is entirely groundless, as is also his view in regard to the danger of pus.

Doctor Blane's arguments in favor of animal vaccination and the reasons he urges for the use of lymph from the heifer, in preference to human lymph, do not apply to the crust. None of the evils he attributes to human vaccination are to be found in the American mode; but as animal vaccination itself has been in some degree a failure, and has, at times, some unpleasant consequences attendant upon its use, we cannot accept it in lieu of the crust, which has proved so generally serviceable in this country. It may possess advantages over human lymph, but the crust is superior to both.

The history of the late epidemic of small-pox in Baltimore confirms the truth of these views. * *

One word in conclusion, in regard to the number of punctures or vesicles necessary to protect the patient. In Europe, as we have already seen, three or four are usually made, but with us, one is found to be sufficient. From it we get all the constitutional effect necessary without any undue local irritation. Jenner and his followers made but one puncture, and we are content to abide by the decision and practise of the early fathers.—*Toronto Sanitary Journal*.

EXTRACTION OF A WATERLOO BULLET WHICH HAD REMAINED IMBEDDED IN THE PALM OF THE HAND FOR UPWARDS OF FIFTY-NINE YEARS.

By HENRY HARLAND, M.D., Wadhurst, Sussex.

James Jenner, aged 83, fought at Waterloo, on June 18th, 1815, in the 44th Foot. In the thickest of the action, near Quatre Bras, whilst he was discharging his musket, a French bullet struck his forefinger. It passed through the proximal phalanx to the barrel of his musket, which it indented, and thence through the fleshy part of the ball of the thumb, down to the trapezium, against the palmar surface of which it became imbedded, and which probably arrested its further progress. Jenner immediately sought surgical aid; the wound was probed several times, but, as the bullet could not be detected, no attempt at extraction was made; he was never afterwards fit for duty. The wound remained open two years, and then healed, leaving so much induration in the palm as to render it very difficult for him to grasp his agricultural tools, and quite impossible to close the hand.