

SMALLPOX—VARIOLA.

By Dr. D. MACINTYRE, M.C., M.D., D.P.H., Medical Superintendent, Plaistow Hospital, London.

The prevalence of smallpox in this country has recently received much prominence in the daily Press, and some confusion appears to have been caused by the presence of two distinct types of the disease, one severe, the other mild.

Cases of the severe type were brought into the country from India last April by the liner *Tuscania*. A member of the crew who had been sick on the voyage home from Bombay was landed at Marseilles, where he was found to be suffering from smallpox, and by the time the ship arrived in this country several of the passengers and crew had contracted the disease. Altogether, forty-five persons were infected by the introduction of the disease into the country in this manner, and seven of them died.

The mild type of the disease, however, has been prevalent in the Midlands and North of England for the past few years, and it has recently appeared in the East End of London. Owing to its mild symptoms and very low fatality rate, some doubt has arisen as to the real nature of this type of infection. The opinion has been expressed that it is a different disease from smallpox and from chickenpox. Epidemics of it have occurred in South Africa for some time past, and there the name "Amaas" has been given to it by the natives. Similar epidemics have also occurred in the West Indies where it has been called "Alastrim." The majority of experts in this country, however, are agreed that it is true smallpox. Like the severe type, it is extremely infectious, and protection against it can be obtained by successful vaccination.

Smallpox has occurred in almost all parts of the world during the past ages. It was very prevalent in England during the seventeenth and eighteenth centuries, and caused a large number of deaths. In pre-vaccination days very few people escaped the disease. It was a common sight in those days to see people whose faces were badly disfigured by pock-marks. Young children particularly suffered severely from it and the mortality among them was very high.

About the end of the eighteenth century a disease called *Vaccinia* (cowpox) was prevalent among the cows on the dairy farms in England. It consisted in the formation of papules, vesicles and pustules on the udders of the cows, and it soon became known that milkers who got this infection on their hands did not afterwards contract smallpox.

In 1796, Dr. Jenner made the discovery that by inoculating matter from a cowpox pustule into a person's arm that individual could be protected from smallpox. It has since been found, however, that the protection obtained from this operation (vaccination) may not last more than a few years, but that permanent immunity may be acquired by re-vaccination at intervals of from five to ten years. When the vaccination of infants was made compulsory in this country in the middle of the nineteenth century, the mortality from smallpox greatly diminished, and at the present day in countries such as Germany and France where re-

vaccination of the adult population is still enforced, smallpox is almost non-existent. In this country, however, the laws governing vaccination have been greatly relaxed in recent years, and a large proportion of the population is now unprotected by vaccination, with the result that the disease is again appearing in the country, although fortunately, so far, it has been chiefly of the mild type.

After an incubation period of about twelve days, the disease sets in abruptly with headache, shivering, pains in the back and limbs and prostration. The temperature rises to about 103, and the pulse is rapid. These early symptoms often simulate an attack of influenza and not infrequently the disease at this stage has been diagnosed as influenza. Occasionally a prodromal rash appears during the stage of invasion which may resemble scarlet fever or measles; sometimes it is hæmorrhagic in character.

The patient suffers from the above symptoms for two or three days, or longer, and then the true eruption sets in. At first dull red spots appear, usually on the face and forearms. These quickly become raised and hard, thus forming papules. The papules are round, well-defined, and feel like "shot" in the skin. All parts of the body may be affected but the eruption is most profuse on the face and extremities and areas which have been subject to pressure or irritation. The protected parts of the body, such as the abdomen and flexor aspects of the limbs, show the least number of pocks. When the papular eruption is well out the temperature, except in severe cases, drops to normal, and the patient feels much better.

In from one to two days the papules develop into vesicles. These are rounded, deeply set in the skin, and often surrounded by an area of redness. They usually show a central depression or umbilication and do not collapse when punctured with a needle.

In another three or four days the vesicles have turned into pustules which show as yellow dome-shaped pocks with a well-marked areola of redness round them. At this date the temperature rises again, giving the "secondary fever" of the disease, and all the symptoms of acute septicæmia may occur according to the severity of the case. When pricked or ruptured by pressure, the pustules discharge thick yellow matter. Afterwards scabs or crusts form and if the true skin has been involved during the process of pustulation permanent scarring or pitting results.

Omitting toxic cases, the severity of the illness may be classified according to the amount and density of the eruption. Cases in which the eruption is not very profuse and the pocks show no tendency to run together are classed as "discrete." Severe cases, in which the eruption is so profuse that the pocks touch each other in places but do not run together, are termed "semi-confluent." The most severe cases, in which the pocks coalesce and mingle their contents so that their individuality is lost, are called "confluent." Again, the term "varioid" is often applied to a mild type which occurs in people who have been vaccinated and in whom the disease does not run its normal course.

As regards treatment, the patient should be removed to hospital as soon as the condition is diagnosed and be nursed in a well-ventilated ward. During the

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