

in two ways. We may say that a certain number of individuals are born with, or acquire the scrofulous diathesis—that they are scrofulous persons—and when any part of their bodies becomes inflamed, that in consequence of this scrofulous diathesis, the inflammation takes on the scrofulous character. Or we may hold that, just as we find croupous, or catarrhal, or suppurative inflammation occurring in different individuals, or in the same individuals at different times, so we may find the scrofulous inflammation; and that it is no more necessary to suppose a scrofulous diathesis than a suppurative or a catarrhal, or a croupous diathesis.

Our views on this subject can hardly fail to be influenced by our surroundings. In Germany or in France we see great numbers of persons, especially children, who at once strike us by their unhealthy appearance. We see that every inflammatory process set up in them takes on the scrofulous character. We see their faces scarred with scrofulous sores, their glands swollen, their bones destroyed, and it seems natural to class them all together as the victims of some constitutional disease.

In this country, however, our experience is somewhat different. We see indeed, a certain number of such unhealthy persons, but we also see the same scrofulous inflammations occurring in persons otherwise healthy. We see caries of the spine produced by injuries in healthy adults; we see healthy children attacked by hip-joint disease, recover from it, and go through a long life in perfect health; we see lymphatic glands pass through all the stages of scrofulous inflammation and degeneration without any permanent effect on the health of the patient. So here it is not unnatural for us to think it possible that this form of inflammation is merely one of the natural varieties of that process.

Two other questions concerning scrofulous inflammation are still to be considered: 1st. Are tubercles present in scrofulous inflammation? 2nd. Does the cheesy degeneration which accompanies scrofulous inflammation give rise to tubercle.

1st. Are tubercles present in all scrofulous inflammations? We find this question answered in four ways. Some hold that a scrofulous inflammation is really nothing but the infiltration of the affected part with tubercles. Some hold that there is first a formation of miliary tubercles, and that these become cheesy and are accompanied by inflammatory changes. Some hold that the process is simply an inflammation, succeeded by degeneration, and that no tubercles are present. Some hold that the process is an inflammatory one of a peculiar nature, resulting in the formation of a cellular tissue of low vitality, and that this process is identical in its nature with tuberculosis. It is easier to point out the defects in these different theories than it is to construct a better one. Probably the entire truth in this matter has not yet been reached.

2nd. Does the cheesy degeneration which accompanies scrofulous inflammation give rise to tubercle? This is a question which is now very generally answered in the affirmative—perhaps too hastily. This opin-

ion has been formed in great measure from the results of experiments made on animals. We must therefore consider here the artificial inoculation of tubercle. Attempts to inoculate tubercle artificially were made at quite an early period.

TUBERCLES—INOCULATION.

History.—Kortum, 1789, Paris, rubbed fluid matter from a scrofulous ulcer into the neck of one boy, and inoculated another boy with the same matter, in the same place, but without results.

Hebréard, 1802, inoculated three dogs with matter, from scrofulous ulcers, but without results.

Salmade, 1805, inoculated a number of animals with scrofulous matter, but without results.

Lepelletier, 1810, inoculated four guinea-pigs but without result.

Cruveilhier, 1826, injected mercury into the trachea, arteries and veins of animals, and produced multiple abscesses, which he called tubercles.

Villemin, 1865, read his first memoir, giving his experiments with gray tubercles on rabbits, and concluding that tuberculosis is a specific affection, like syphilis, that it has its cause in an inoculable material, and that it can be easily inoculated on rabbits.

In 1866 he published his second memoir, and in 1868 his book on the same subject. He inoculated rabbits from men, from cows, and from other rabbits; also guinea-pigs, dogs, cats and sheep. In dogs and cats he obtained no well-marked results, in sheep no result. The matter which he used was gray tubercles from the lungs and serous membranes; the cheesy infiltrated matter from lungs, and the cheesy glands, sputa and blood of phthisical patients. With all these matters he obtained positive results. In the lungs, liver, spleen, and serous membranes of the animals inoculated he found numbers of small gray tumors, identical in appearance with the gray miliary tubercles of men.

In four cases he produced yellow, infiltrated partly softened cheesy lobules in the lungs, and in one case a cavity.

From these experiments he deduced the conclusion that tuberculosis is a specific, inoculated disease like syphilis; that gray and yellow, isolated and infiltrated are all of the same nature; that they have no specific anatomical elements, but that the proof of their nature is their inoculability.

Lebert, 1866, repeated Villemin's experiments on rabbits and guinea-pigs, and confirmed his conclusions. After this he went on to inoculate with miliary tubercles, cheesy infiltrated tubercles, cheesy lymphatic glands, portions of cancer, mercury and charcoal. From these experiments he concluded just the opposite. That tubercles are not specific nor inoculable. That they are simply the result of circumscribed inflammations; that they have no specific elements. In one case, in a guinea-pig, inoculation of peritoneal granulations gave rise to cavities in the lungs.

Herard, 1867, inoculated four rabbits, two with gray granulations and two with cheesy infiltration. The first two succeeded, the second two did not, from