the body, nothing is definitely known, but some authorities hold that this same fungus is found on the leaves of certain plants, and that there is a marked resemblance between it and the fungus root of India; as described by Vaudy Re Carter. In a great number of the cases of the disease in cattle, the infection has been traced to certain contaminated food stuffs. Thus, hay infected with the germ is given to animals, and during mastication the parasite gains entrance through some wound in the mucus membrane or the teats are wiped with a wisp of hay or straw, and so the infected milk carries the germ along with it into the bodies of human beings. Also persons caring for the animals affected carry the danger on their hands, they handle buckets, perhaps use them to drink out of, and so the disease is spread far and wide. Thus, it is evident that once the disease appears in any animal the chances for infection increase, so long as that animal remains among the rest, so that in a very short time all articles of the stable may become contaminated. The pasture lands also stand in danger as it is almost certain that the parasite thrives on the leaves of certain plants, and that it may be carried, along with parts of these plants, into the bodies of cattle not previously affected. The parasite grows most readily, according to some authorities, on barley, and this cereal is the most likely to wound the tissues of the mouth, thus bringing about inoculation.

So much for the general causes of the disease in cattle. Let us look for a moment at man and see how it is that he may become a victim. First he may eat grain, on which rests the actinomyces, or he may take a wisp of hay or straw into his mouth, on which rests the deadly parasite, wound the tissues and so get the disease. The milk or meat which he consumed may be contaminated, or his hands may contain abrasions which become poisoned by handling diseased animals or impregnated substances. A farmer may, for instance, use his knife from his pocket to remove or open a tumour in an animal afflicted with the disease, and without washing the instrument he replaces it in the pocket laden with the parasite, or still worse he may cut up his food with it or use it to trim vegetables of various kinds, and so he goes on spreading the infection over a very wide area. Again, the persons tending these animals may come in direct contact with healthy individuals and, without any knowledge of it, give the disease to them. I could name many other sources of infection, but the above show the general way in which the disease may be contracted.

Let us consider for a moment this specific parasite, the Actinomycis Bovis, or ray fungus, so called from its peculiar shape, as seen under the microscope. It has often been compared to the "Daisy" so far as its general outline is concerned, and let us imagine this little flower as we describe this germ. In the greater number of the cases of Actinomycosis, as seen in animals, the parasite assumes the form of minute, granular masses, the largest of which is visible to the naked eye, having a somewhat yellow color, that are readily appreciated by the touch as small, rough bodies, about the size of a millet seed, and under the power of a lens of 60 diam., they are recognized as opaque granular substances, varying in size and outline, but all agreeing in having a finely granular surface. Without staining reagents they are sometimes colorless, but generally they assume a faint, greenish, yellow tinge. Let us look at a colony under a higher magnifying power and notice its characters. Many of these show an irregular, radiate pattern, the striae extending from the centre to the periphery, to the latter giving a somewhat notched or serrated appearance. If the sections are very thin the larger colonies will drop out of place, and this section when mounted will show a reticulated or spongy character. I cannot go into a very minute description of the micro-organism, as I do not wish to occupy the time, but let us look a little more carefully and see what is the character of the component parts of this colony. The centre presents a finely granular appearance, and as we approach the periphery we find a network of thread-like forms, joined at the proximal end, to those granular masses, and at their distal extremities, assuming in nearly all the cases, a club-like form. Those clubs were thought, at one time to be a very important element in the causation of the disease, but of late this importance is denied, other structural elements of the colony having a more important significance. In cattle these club-like forms are the only recognizable elements, in some of the cases, but yet there are many cases in which they are entirely absent. When we put the same section under a powerful lens, say a $\frac{1}{12}$ oil immersion, it is seen to contain elements as follows: I. Minute cocci; II. Mycelial filaments of thread-like forms; and III. Clubs.