

any tissue of the body, the favourite sites being the skin and subcutaneous tissues, especially about the face and neck, the mouth, pharynx and alimentary canal and the lungs. The actinomyces are frequently carried by the portal circulation to the liver and metastases through the blood current to other remote organs are common, while extension by the lymph channels is rare, and primary invasion of bone probably does not occur.

Some observers have succeeded in inoculating animals, but it is believed that the disease is rarely, if ever, communicated directly from one animal to another, or from an animal to man, either by contact or by the use of the flesh of actinomycotic animals as food. The parasite enters the body directly by the mouth, by ingestion or inhalation, or through wounds of the skin; it does not enter through the sound skin. The fungus occurs as smut on certain grains and grasses, notably the bearded grains, as barley and rye, hence the subjects of the disease are generally from rural districts, and it will easily be understood that fruits, grains and grasses in their natural state may be the means of conveying the parasite to the mouth, whence it may enter through wounds or abrasions of the mucous membrane of the mouth or any part of the alimentary canal. It is also likely to be inhaled with the dust produced by threshing. Actinomycosis is said to be much more common in Europe than in America, and to be especially common in certain districts of Russia among the peasant population, where rye is grown extensively for food. It is also a very common disease of cattle in these same districts, but I am unable to say whether the same conditions have been observed in this country or not.

Clinical diagnosis is based upon, *first*, the tendency to much proliferation and tissue increase, with relatively little suppuration; *second*, the tendency of the fungus to extend from the point of entrance outwards, and to find its way into the blood current. For example, when the parasite enters the mucous membrane of the mouth, as it frequently does through the ulcerated gums around carious teeth, it extends to the cheek, and when it goes directly into the alimentary canal it extends into the surrounding tissues from the intestine, and often ultimately to the liver through the portal circulation. *Third*, the presence of yellow granules in the pus. This sign, in my experience, is not very reliable; I have often found such granules in pus which seemed to indicate actinomycosis, where further investigation failed to corroborate the suspicion, and, on the other hand, I have several times failed to recognize any such bodies (although looking for them) where the Ray fungus was subsequently clearly demonstrated. (The wide range of situations in which the lesion may be found and variations in its acute-