

SECTION XI.

DISEASES DUE TO ANIMAL PARASITES.

I. PSOROSPERMIASIS.

UNDER this term are embraced several affections produced by the sporozoa. These parasites belonging to the lowest division of the protozoa, are also known as psorosperms and gregarinidæ. They are extraordinarily abundant in the invertebrates, and are not uncommon in the higher mammals. The entire group of blood parasites, hæmatozoa, which live within the corpuscles, are closely related to them. Psorosperms are, as a rule, parasites of the cells—*cytozoa*. The commonest and most suitable variety for study is the *coccidium oviforme* of the rabbit, which produces a disease of the liver in which the organ is studded throughout with whitish nodules, ranging in size from a pin's head to a split pea. On section each nodule is seen to be a dilated portion of a bile duct; the walls are lined with epithelium in the interior of which are multitudes of ovoid bodies—the coccidia. Another very common form occurs in the muscles of the pig, the so-called Rainey's tube, which is an ovoid body within the sarcolemma containing a number of small, sickle-shaped, unicellular organisms.

These bodies probably play a more important rôle in human pathology than has hitherto been thought. The cases reported may be grouped under the following divisions: internal and external.

(1) **Internal Psorospermiasis.**—In a majority of the cases of this group the psorosperms have been found in the liver, producing a disease similar to that which occurs in rabbits. In Guebler's case there were tumors which could be felt in the liver during life, and they were determined by Leuckart to be due to coccidia. In W. B. Haddon's case the patient was admitted to St. Thomas's Hospital with slight fever, drowsiness, and gradual unconsciousness; death occurred on the fourteenth day of observation. Whitish neoplasms were found upon the peritonæum, omentum, and on the layers of the pericardium; and a few were found in the liver, spleen, and kidneys. A somewhat similar case, though more remarkable, as it ran a very acute course, is reported by Silcott. A woman, aged fifty-three, admitted to St. Mary's Hospital, was thought to be suffering from typhoid

fever. She had had a chill six weeks before admission. There was fever of an intermittent type, slight diarrhœa, nausea, tenderness over the liver and spleen, and a dry tongue; death occurred from heart-failure. The liver was enlarged, weighed eighty-three ounces, and in its substance there were caseous foci, around each of which was a ring of congestion. The spleen weighed sixteen ounces and contained similar bodies. The ileum presented six papule-like elevations. The masses resembled tubercles, but on examination coccidia were found.

The parasites are also found in the kidneys and ureters. Cases of this kind have been recorded by Bland Sutton and Paul Eve. In the case reported by Eve the symptoms were hæmaturia and frequent micturition, and death took place on the seventeenth day. The nodules throughout the pelvis and ureters have been regarded as mucous cysts. In a case reported by Joseph Griffiths the tumors in the ureter caused hydronephrosis.

(2) **Cutaneous Psorospermiasis.**—(a) *Follicular.*—This remarkable skin-disease was originally described by J. C. White, under the name of *keratosis follicularis*. Darier, of Paris, has shown that this is really a parasitic affection. The lesions are chiefly on the face, the flanks, and the inguinal regions. It is at first papular, surmounted by a grayish crust, dry and hard. The lesions finally become confluent, and form a series of irregular elevations giving a rasp-like feeling to the touch.

Microscopical examination shows that in these papillomatous growths there are numerous organisms corresponding to psorosperms. At the St. Louis Hospital, in Paris, Darier was kind enough to show me the cases and the specimens from them. No one accustomed to the appearance of psorosperms as seen in the lower animals could question the truly parasitic nature of these bodies. A case of the disease has been reported in this country by A. R. Robinson.

(b) *Paget's Disease of the Nipple.*—In this affection, formerly regarded as an eczema, psorosperms are constantly present, as shown by Darier, A. B. Macallum, and others. They are readily demonstrated, without any special preparation, and here, too, of the nature of the bodies there can be no question.

In molluscum contagiosum and in epithelioma many observers have noted the presence of bodies which lie in and between the epithelial cells and have some resemblance to psorosperms. The bodies are readily seen in sections of epithelioma, but they lack the sharply defined characters of the coccidia which are present in Paget's disease and in White's keratosis.