

family were affected. Figures usually quoted showing the disease to be very much more frequent in females than in males are in the experience of the writer not verified in Baltimore, where the figures for the sexes have been about equal. As regards race, we have found a marked less susceptibility in the colored race, who show only about half the relative number of cases. As to age, the greatest number occurred between 20 and 40, but it may occur at any age and the instances with an onset below 20 years of age are by no means rare.

Changes in the Joints. In considering these, one point must be kept in mind, namely, that many of the descriptions in the literature are concerned only with the late stages. This is seen especially in the classical atlas of Adams, which gives an excellent idea of the final results. However, as concerns our ideas of the essential nature of the disease it is important to study the early changes, and these, as has been said, are rarely found at autopsy unless death occurs from some other disease. The obtaining of materials at operation, which is being done now much more frequently, has added considerably to our knowledge. It may be said that every grade and variety of change may occur. They may be grouped under various headings. (a) Effusion. This is often early, may recur and is sometimes persistent. The fluid shows no special characteristics. (b) Changes in the synovial membranes. These may be early and show a marked hæmorrhagic character. Inflammatory changes are marked and one part may be more concerned. Apparently the cartilage in close connection with such areas tends to be affected first. The subsequent changes in the synovial membranes may be very marked. This in some way there may be marked hypertrophy and the development of villous arthritis. This is apt to occur if fluid is present with motion. (c) Changes in the cartilage. Thinning, ulceration and destruction often occur. This may be of all grades, only a small area being affected or the whole cartilage destroyed and the bony structures being in apposition. There may also be new bone formation, usually at the junction of periosteum and cartilage, forming the exostoses. (d) Bony changes. The bones may show marked atrophy, which may be due partly to disuse. There may be marked bony overgrowth, usually at the margins of the joints of the extremities, and especially common in the spine, where the ligaments may be entirely replaced by bone. (e) True ankylosis is rare, although occasionally seen.

Changes in the structures about the joint are common and may be responsible for much of the deformity. Secondary changes, as muscular atrophy, contractures, are often found. They are, however, secondary and not essential features of the process. All these forms of change may be associated in varying degree.