

sian systems much enlaid and filled with small round connective tissue cells, like young (red) marrow cells. Those spaces nearer the medullary canal show at times numerous fat globules. About many of the enlarged Haversian systems the bone salts have evidently been removed leaving a layer of decalcified fibres. A number of the enlarged spaces show a distinct layer of round cells laid down around the margin of the space, resemble osteo-blasts. No osteo-clasts seen. Enlarged cancellous spaces extend right through to periosteal bone surface.

Periosteum.—Peels off readily. Outer layer fibrous as usual.—Inner layers somewhat thickened showing fibrous tissue and fatty globules.

Osteogenetic layers not well marked, no osteo-blasts, but numerous fat globules seen. No osteo-clasts.

Radius.—Shows only slight atrophic changes. Cancellous spaces slightly enlarged and filled usually by numerous fat cells.

Remarks.—The indistinctness of the skiograph is marked as seen by comparison with one of normal bone—so much so, that another exposure was advised with even a worse result, the bones being still less clear. As seen in this case, an operator may, with the assistance of the X rays, appreciate the defect in the bone in ununited fracture, and, with the information thus gained be prepared with the means to remedy it, and thus save time during an operation.

TUBERCULOSIS.

With reference to this condition I desire to draw your attention to the involvement of the epiphyseal region in tuberculosis of the long bones, and the use of the X Rays in an examination of the diseased structures.

During the growing period of bones *i.e.* the first and second decades, the nutritive activity of the neighborhood of the epiphyseal line is marked, the newly formed tissue is very vascular, there being a greater determination of blood to this region on account of the physiological changes going on here.

During this period, too, twists, wrenches, etc., are common—many of them of so slight a nature as to be scarcely noticed by the patient. This traumatism causes an increase in the circulation of the epiphyseal region and probably a rupture of the newly found blood-vessels and delicate trabeculae.

If in a patient, then, during the growing period of bone, some slight traumatism causes increased congestion of the articular end, and, if, bacilli, circulating in the blood accumulate in sufficient number in the blood-vessels of that part or escape into the tissues, then their peculiar action is manifested by the formation of tubercles, if the patient is predisposed to tubercular disease, *i.e.*, if the resistant powers of the system to the bacilli is lessened by heredity.

The tubercle having been formed, the leucocytes around it may