Rheumatoid Arthritis (Fig. 1)

In rheumatoid arthritis the principal changes in the hands occur at the metacarpophalangeal and carpal joints, with ulnar deviation of the fingers, muscular wasting, and rheumatoid nodules. A juvenile form of rheumatoid arthritis with lymphadenopathy and hepato-splenomegaly (Still's disease) may occur. Similar, but milder, changes in the hands are occasionally seen in ankylosing spondylitis, ulcerative colitis, and Reiter's syndrome.

Kerato-conjunctivitis sicca (Sjögren's syndrome) and anterior uveitis may occur in patients with rheumatoid arthritis, while if the disease is severe, a rheumatoid nodule in the sclera may result in scleromalacia perforans. In Still's disease, uveitis is associated with a band keratopathy.

Gout (Fig. 2)

This may occur as a primary inborn error of purine metabolism, or secondary to disease of the haemopoietic system such as polycythaemia rubra vera or the myeloproliferative disorders. The initial changes in the hands may be those of a severe mon-arthritis which may progress to chronic tophaceous gout involving many joints. X-rays of the hands may reveal punched out areas due to urate granulomata.

The ocular manifestations include conjunctivitis, a band keratopathy due to the deposition of urate crystals in Bowman's membrane, episcleritis, scleritis, tenonitis, and anterior uveitis.
Thyroid Disease (Fig. 3)

A dry thickened skin is characteristic of myxoedema and this contrasts with the delicate skin and warm moist palms of thyrotoxicosis. A fine tremor of the outstretched hands is typical of thyrotoxicosis, and in some patients a syndrome of clubbing of the fingers, pretibial myxoedema, and exophthalmos may also be present (thyroid acropachy).

The ocular signs of myxoedema are dry puffy lids and loss of the outer half of the eyebrows; conjunctival oedema and anterior cortical cataracts have also been reported. In thyrotoxicosis lid retraction, exophthalmos, and ophthalmplegia may be complicated by an exposure keratitis or papilloedema.

Scleroderma (Fig. 4)

This condition, which is one of the collagen diseases, occurs in either a generalized or a localized form (morphoea). The hands may present with a puffy non-pitting oedema which progresses to a tight smooth skin which cannot be elevated from the subcutaneous tissues. Raynaud’s phenomenon is often present.

The main ocular manifestations are keratoconjunctivitis sicca, cataracts, and fundus changes similar to those found in hypertensive retinopathy. In the rare Werner’s syndrome, diffuse scleroderma developing after puberty is associated with cataracts, genital atrophy, and other endocrine disturbances, dysphonia, and premature ageing.