SPECIMENS FROM THE HUNTERIAN COLLECTION

R. J. LAST, LONDON, ENGLAND

Professor of Applied Anatomy, Royal College of Surgeons

It is proposed to illustrate with photographs a series of specimens of orthopaedic interest in the anatomical museum of the Royal College of Surgeons of England, and the first examples appear in this number of the Journal.

The museum of the Royal College of Surgeons of England began as the collection of specimens left by John Hunter at his death in 1793. Hunter had retired from the army thirty years earlier and began practice in London. Among the surgeon-anatomists of those days he was pre-eminent as an experimenter and a thinker. He extended his researches into the whole realm of living things, plant and animal, vertebrate and invertebrate. He was a great comparative anatomist and perhaps his most consuming interest lay in the investigation of form and how it varies according to functional needs. Examples illustrating the interplay between form and function were collected and kept by Hunter, until at his death there were some 14,000 specimens in his private collection. They represented his life's work and, incidentally, almost his whole fortune. Indeed, his executors were forced to raise money to support his wife and children. After some seven years the Government of the day purchased Hunter's specimens as a collection for the nation.

At the granting of the Royal Charter to the (then) Company of Surgeons the Royal College of Surgeons was founded in 1800, and the Hunterian collection was entrusted to its care. The collection did not remain static. Under the guidance of succeeding conservators of the museum a constant inflow of new specimens was maintained. These specimens were then as now derived from two main sources. First, the prosectors of the college produced specimens to augment the collection and, second, a large number of private gifts and bequests served still further to enlarge and complete this unique collection. With growth in size came the need for more accommodation, and gradually more rooms were added. The collection had increased fivefold from the original 14,000 Hunterian specimens. Then came the disaster of 1941.

At the outbreak of war the specimens had been stored in the basements of the college buildings, where expert opinion had pronounced that they would be safe from blast. This proved to be correct, but the bomb that destroyed so much of the college building was followed by a fire whose heat burst many of the bottles. The specimens were mounted for the most part in spirit, and so the fire spread. Two-thirds of the collection was lost.

At the end of the war the surviving specimens were again put on display in the limited space available and the work of rebuilding the collection commenced. The present prosector is producing incomparable human dissections, and a number of invaluable gifts of specimens have been received. Details can be found in the annual Scientific Reports of the college. For the interest of those able to make a personal visit to the museum it is worth noting the different colours in which the catalogue numbers are painted on the jars. Hunter's original specimens are labelled in black, post-Hunterian additions up to the late war in red, and post-1945 current additions in blue. A further characteristic of the current additions is the fact that they are mounted in "perspex," whose flat surfaces and great transparency give to the specimens an undistorted lucidity that cannot be obtained with glass jars.

There is little of orthopaedic interest in any surviving Hunterian specimens. Hunter's human specimens appear in various sections as incidental members of the sum total of living things, and are not there as human anatomy for its own sake. The existing human anatomy part of the museum is entirely post-Hunterian, much of it, indeed, post-1945, and it is from this section that the present and subsequent photographs and descriptions are taken.

1. THE LIGAMENTS OF THE TARSUS

SPECIMEN S 97 B

Lateral view—The three fasciculi of the lateral ligament of the ankle joint can be seen; the obliquity of the calcaneo-fibular ligament is very pronounced, even in full dorsiflexion. The posterior talo-calcaneal ligament is preserved. Note the strong ligamentum cervicis tali occupying the anterior part of the sinus tarsi.

More anteriorly a glass rod has the strong calcaneo-navicular part of the bifurcate ligament glistening on its far side. In this specimen, as in so many, the calcaneo-cuboid part of the bifurcate ligament is absent, the dorsal calcaneo-cuboid ligament alone being present. The calcaneo-navicular fasciculus is always present, is always strong, and always articulates with the head of the talus, its articular surface being covered, like that of the spring ligament, with fibrocartilage.

Specimen S97 B

Specimen S 97 B

Inferior view—The long plantar ligament is attached mainly to the ridge behind the groove on the cuboid, but some of its superficial fibres bridge the groove and pass to the bases of the second, third and fourth metatarsal bones. The tunnel so produced lodges the tendon of peroneus longus. It is to be noted that the tendon does not lie in the depths of this tunnel, but that its pull draws it posteriorly, and it is on the posterior part of the slope of the cuboid that articular fibrocartilage is found. A sesamoid fibrocartilage (often ossified) lies in the contiguous part of the tendon of peroneus longus. The short plantar ligament, much thicker, lies more obliquely.

The fibres of the inferior calcaneo-navicular (or “spring”) ligament lie more nearly transverse than longitudinal in the foot. A glass rod lies beneath the deep part of the medial (deltoid) ligament of the ankle, which connects the medial malleolus to the neck of the talus.

2. THE INTEROSSEOUS LIGAMENTS OF THE WRIST

SPECIMEN S 15 A

The great preponderance of transversely running fibres on the anterior surface of the carpus is well seen in this specimen. A particularly powerful band passes from the radial styloid and adjacent bone to the lunate. (On the dorsum of the wrist there is a similar transverse band, but attached to the triquetral and leaving the lunate free.) More proximally a strong ligament joins the lower border of the radius to the ulnar styloid; this ligament blends inseparably with the triangular fibrocartilage. The radio-ulnar joint has been opened by removal of its thin capsule; note the proximal prolongation of the joint space between radius and ulna. This is the membrana sacciformis; it lies between the interosseous membrane and the pronator quadratus muscle.

Of particular interest in this specimen is the tunnel for the tendon of flexor carpi radialis, here occupied by a glass rod. The tendon pierces the flexor retinaculum over the scaphoid, *is often attached to the scaphoid*, and then passes beneath this strong ligament joining the ridge of the trapezium to the capitate. An optical illusion in the photograph gives a false appearance of translucency to the ligament. The ligament is highly illuminated; the adjacent edge of the trapezium shows darkly and gives a false appearance of being the glass rod showing through the ligament. In fact the ligament is very thick. The synovial sheath of flexor carpi radialis extends distally into the fibro-osseous canal in which the glass rod is lying.

The ulnar side of the carpal tunnel for the flexor tendons consists of the pisiform and the hook of the hamate. The pisiform ligament is well shown; it consists of two bands diverging from the pisiform, one to the hook of the hamate and the other, more medially, to the ulnar border of that bone. The pisimetacarpal ligament, overlying the latter band, has been removed. The deep transverse ligament of the metacarpal heads is well shown.