AN INAUGURAL DISSERTATION

ON

The Hand,

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The Hand

In the beginning God created the Heavens and the Earth, and pronounced every thing then in very good — the former of which he should be ruler — the latter of which man should be ruler — the almighty creator making every thing as he did first the earth — then the organ in Kingdom — the Animals of the fields — and the birds of the air. He then created man — and pronounced him ruler over all things upon this earth. But in order to make him superior to the Animals of the field — the Almighty endowed him with a mental faculty, and a hand the former of which the brute Kingdom is
The Hand.

entirely void of... the latter of which the truth has one some what resembling that of man but a much less complicated organ... It is the part which terminates the upper extremity in man. It extends from the fold of the rest of the extremity of the fingers, being connected to the remainder of the upper extremity by means of muscles, ligaments, tendons, blood vessels and nerves. They all run through and over the hand in order to sustain it in its natural position.

The hand is sustained by a long skeleton composed of a number of pieces movable on each other. The internal surface
of the hand is concave to facilitate flexion of the fingers that the grasp might be firm. The external surface is convex laterally and is nearly straight antero-posteriorly. According to anatomists the hand is divided into three parts: the carpus, metacarpus and phalanges.

The hand has twenty-nine bones. Of the carpal bones which are eight in number, the metacarpal bones are five, and the phalanges are fourteen and two sesamoid bones.

The bones of the carpus commencing from the radial side, the first row is the scaphoid, luna, trapezoid, trapezium, and pisiform, and the second row is the
Scaphium trapezides os magnum
and e un form
of the metacarpal are five in num-
ber and those bones which are
situated between the carpal and
the phalanges, they are clas-
ed among the long bones, and
are divided accordingly.

The phalanges are named from
their arrangement in rows and
are fourteen in number,
three to each finger and two to the
thumb— They from their shape
have likewise been clasped among
the long bones, and are divided
according to their clas-

The carpal bones articulate with
the radices above forming
a gingiform joint. Its ligaments
are four in num-
ber.
The Synovial membrane lines the articulating surfaces of the radius and the first row of the carpals. The bones of the corpus form by their articulations. Amphiarthrodial joints except the confused head of the os magnum and uncorner, which is divided into a cuneiform, and formed by the scaphoid, lunula, and cuneiform bones and formed by their articulations an enarthrodial joint. The metacarpo-phalangeal articulations form ginglymo joints. Their ligaments are four in number. The joints formed by the phalangeal articulation are of the same class. Three ligaments
only belongs to these groups.

"The Muscles"

"The Radial region."
Abductor pollicis — Flexor ossis metacarpi — Flexor brevis pollicis — Adductor pollicis. The Abductor pollicis arises from the Trapeziun and annular ligament.
It is inserted into the base of the first phalanx of the thumb.
Flexor ossis metacarpi arises from the Trapeziun and annular ligament, and is inserted into the whole length of the metacarpal bone of the thumb. Flexor brevis pollicis arises by two heads. The external portion arises from the Trapeziun and annular ligament.
The internal portion from the trapezoids and trapezium. They are both inserted into the base of the first phalanx of the thumb, having a tendinous sheath in each tendon for the protection of the joint.

Adductor pollicis is a triangular muscle in shape. It arises from the metacarpal bone of the middle finger, its fibres converging from its broad origin to be inserted into the base of the first phalanx of the thumb.

Ulna region


Palmaris brevis is a thin plan...
The Hand

of muscular fibres about an inch in width, which arises from the annular ligament and palmar fascia and passes transversely to be inserted into the integuments of the inner border of the hand.

Abductor minimi digitii, is a small tapering muscle which arises from the pisiform bone where it is continuous with the tendon of the flexor carpi ulnaris, and is inserted into the base of the first phalanx of the little finger, and into the expansion of the Abductor tendon.

Slopetoris minimi digitii, is a small muscle which arises from the pisiform bone and is inserted into the inner border of the hand.
The Hand

tended into the base of the first phalanx. This muscle is sometimes wanting.

Adductor ossis metacarpi arises from the trapezoid bone and annular ligament
and is inserted into the whole length of the metacarpal bone

of the little finger—

[Palmar Region]

[Interossei palmaris, interossei dorsales]

[Interossei palmaris, interossei dorsales]

The lumbricales four in number are nearly accessory to the deep flexors. They arise from the tendons of the deep flexors and are inserted into the aponeurotic expansion of the extensor tendons on the radial side of the hand—The Palma Intersossei
The Hand

...in number and are placed upon the metacarpal bones rather than between them. They arise from the base of the metacarpal bone of one finger and are inserted into the first phalanx and an aponeurotic expansion of the same finger. The first belongs to the index finger, the second to the ring finger, and the third to the little finger; the middle being excluded. The dorsal interossei are four in number. They are bipenniform and arise by two heads from the adjoining side of the base of the first metacarpal bone. They are inserted into the base of the first phalanx and an aponeurotic expansion...
The Hand.

of the Extensor Tendons. The action of these muscles are expressed in their names. Those of the radial side belonging to the Thumb, and providing for three of its movements by Abduction, Adduction, & Flexion. The ulnar groups in like manner are subservient to the three motions of the little Finger. The Intersees are adductors and adductors to the Several fingers. The Supinators are accessor to the deep flexors. They were called by the earlier anatomist Fidici sii from an idea, that they might effect the fractional movements by which the performer is enabled to produce the various notes on that instrument.
The Hand

The hand is supplied with blood by branches of the Brachial artery—viz. the ulna and radius. The former supplying downward the outer and front portion of the arm, meets one of the branches of the radius, the superficialis polae, and forms by their union the superficial palmar arch, which gives off principally the digital branches. The radial, passes down the arm on the radial side to the hand, forms the deep palmar arch, and terminates by inoucating with the superficial palmar arch; the fingers are supplied with blood by branches from the superficial palma.
The Hand

There are four in number of these branches. The first and smallest is distributed to the inner side of the little finger. The other branches are short trunks which divide between the heads of the metacarpal bones and form the collateral branch of the little finger. The collateral branches of the ring and middle fingers—and a collateral branch on the ulnar side of the index finger—

The blood is returned from the hand by the veins comitans, the anterior and posterior ulnar veins, and the radial vein. These veins unite and form the two great veins: basilic and cephalic, which convey it to the great organ of circulation.
The hand is the great organ of prehension and touch. It is supplied with nerves, by branches of the ulnar, radial, and median nerves.

Physiology.

In order to appreciate accurately the shape and size of objects, it is necessary that they should be embraced by a portion of the body which can examine and be applied to them in every direction.

In man, the organ well fitted for this purpose is the hand, which is situated at the free extremity of a long and flexible member which admits of its being moved in every direction and renders it not only well adapted to touch but that of prehension also. Man alone possesses a true hand although...
The Hand

other animals have organs of prehension somewhat resembling the hand—they are much less complete.

The chief superiority of the hand consists in the strength and size of the thumb—standing as it does from the fingers can be brought in opposition to them so as to enable us to grasp bodies and various mechanical processes under the guidance of the will or intellect.

The thumb was esteemed by Albino such an important organ that he called it the dispensor hand assisting the greater. (Masses para majori adjunti)

It was likewise an ancient notion to ascribe the chief superiority of man or animals, and his preeminence in the universe—his intelligence in short—to the hand, some say that man
is the wisest of all animals because he possesses a hand. But whether this be true or not, I cannot say. But I am somewhat inclined to doubt it. While this is the opinion of many metaphysicians, others have considered the hand the source of mechanical capabilities. Other again say it can only be regarded as an instrument by which information of particular kind is conveyed to the brain, by which other functions are executed according to the direction of the will.

In addition to the advantages referred to, the hand is furnished with the sensile instrument. The papillae are largely developed, especially at the tip of the fingers. Where they are arranged in concentric circles and rest upon a spongy tissue, considered by many physiologists.
The Hand

Xologist's erectile, serving as a cushion at the posterior extremity of the fingers the nails are situated, which support the pulp of the fingers behind and renders the contact with objects more immediate. This happy organization of the soft parts of the hand alone concern the sense of touch directly. Metaphysicians have differed widely regarding services that should be attributed to the touch. Some have greatly exaggerated them considering it the sense of excellence or the first of senses. Buffon in particular assigns so much importance to the touch that he believed the cause why one person has more intellect than another is his having made more prompt and repeated use of his hands from infancy. Hence he recommends that infants should be allowed to use them.
The Hand

freely from the moment of birth, touch can be cultivated to an enormous extent. For instance look at the blind man. He by cultivating the touch, it becomes so acute, that by running his hand over a book he becomes so well acquainted with the different forms of letters, he reads with as much facility as if he was glancing it over with the eye. The touch may also be so acute as to enable him to tell the different colors of each other without the aid of vision.

Again, the accoucheur, without the aid of vision, by means of the learned touch, is enabled to tell the different presentations. Whether everything be normal or abnormal, showing conclusively that the hand might and does answer in the place of...
The eye, to some extent, I might further add that this is the organ by which all instruments are accomplished. From Herschell’s microscope down to the simplest instrument. Taking the subject in this point of view, there is room for someone to immortalize himself by writing a monograph on the subject. There being only one on it (Bell).