

or ossification of a tendon, rather than a true carpal ossicle. There may be an analogous sesamoid ossicle on the other side of the wrist (on the side of the scaphoid) even in Apes, and this obtains its maximum in the Mole, where it strengthens and broadens the manus for digging. The true carpal bones may be more numerous or less numerous than in Man. Thus there may be an ossicle—called intermedium or centrale—placed in the mid line between the two rows of carpals, and this may be double, as in *Cryptobranchus* and some Siberian Urodeles. The unciforme may also be represented by two bones, as amongst Chelonians; the pisiforme is often absent, and also the trapezium. The bones of the distal row are the less constant in number and development, and they may coalesce with the metacarpals, as in the Chameleon. Their development is related to that of the digits with which they articulate. All the true proximal carpal ossicles may unite into one bone, as in *Pteropus*, and the whole carpus may be reduced to two distinct bones, as amongst Birds.

The *metacarpus*, when fully developed, consists of five rather long metacarpal bones, as in Man. There may, however, be but two, and these united into what is called a "canon bone" (as in Sheep, Deer, &c.); or there may be but a single one, as in the Horse, answering to Man's third metacarpal. They vary in relative size and proportion in different animals, but are most remarkable for their length and slenderness in the Bats, while they are much elongated in the Horse and most Ruminants.

As to the *digits*, there may be but a single one, as in the Horse, or two, as in Ruminants and the Marsupial known as *Charopus*. There may be three, as in the Rhinoceros, the Proteus, and in *Seps*; or there may be four. The digits are never certainly more than five (except by monstrosity), although in the Ichthyosaurus extra marginal bones along the manus give at least the appearance of more.

When a digit is wanting it is generally the pollex (thumb), as in Spider Monkeys, but it may be the fifth, as in Pterodactyles, or both fourth and fifth may be wanting, as in Birds. The pollex may be more or less opposable to the others, as in Lemurs, most Monkeys, and in Man, or two digits may be opposed to the other three, as in the Chameleon.

The second digit may be greatly reduced, as in the Potto, or the third may be disproportionately slender, as in the Aye-Aye, or thick, as in the Great Armadillo. The digits may be enormously elongated, as in the Bats, or short, as in the Mole and the Land Tortoises. They may be very imperfectly developed, as in Birds. They may be so united by dense tissue as to be quite incapable of separate motion, as in the Cetaceans. The bones of the fingers are called phalanges, and there are always three of them to each digit except the pollex, which has but two in all Mammals with the exception of certain Cetaceans, which have more. There may be as many as fourteen phalanges in one digit in *Globiocephalus*. The proximal row of these bones may become ankylosed to the metacarpals, as in the Three-toed Sloth. In Reptiles the numbers of the phalanges often increase from two in the pollex to five in the fourth digit, as in the Monitor. The abortive manus of Birds has at its best but three digits, with two phalanges to the pollex, three to the index, and one or two to the third digit. The phalanges are very numerous in the Ichthyosaurus and Plesiosaurus.

B. Pelvic.—The bone of the thigh is called the *femur*, and is a long bone which varies less in its form and proportion in different animals than does the humerus. It is, however, relatively very short in the Seals, and still shorter in the Ichthyosaurus.

In front of the knee-joint there is generally present a large sesamoid bone known as the knee-pan or patella. This, however, may even in Mammals be very small, as in Bats and Seals, or wanting altogether, as in the Wombat.

The leg below the knee is supported by two long bones, the *tibia* and the *fibula*, placed side by side, whereof the former is the more internally situated, the larger generally, and the more constant. The two bones may ankylose together at each end, as in the Armadillos, or they may do so only below or only above; the two bones may be completely fused together, as in the Frog. The tibia may be the only long bone, through the small development of the fibula, as in Ruminants and the Horse. The fibula may be quite styliiform, as in Birds, or it may be developed inferiorly but be atrophied at its upper end, as in Bats. It may be represented only by a small ossification outside the lower end of the tibia, as in the Ox, and with this there may exist a styliiform rudiment of its upper part, as in the Elk.

The joint by which the foot moves on the leg is situated between the lower end of the leg bones and the tarsus in Mammals and Amphibians. In Birds and Reptiles, however, this joint is placed in the tarsus, the proximal part of which is firmly connected with the leg, while its distal part is firmly connected with the metatarsus.

The *tarsus* of Man consists of seven irregularly shaped, more or less short bones. Of these the astragalus joins the tibia and has the os calcis beneath it and the navicular in front of it, while the metatarsals are supported (from the great toe outwards) by the internal, middle, and external cuneiform bones and by the cuboides, which is connected with the fourth and fifth metatarsals.

The tarsus may have its parts more or less permanently cartilaginous, as in some Urodeles. The number of its bones, or cartilages, may be as many as nine, as in the Salamander, or be reduced to three, as in *Proteus*, or perhaps to two, as in *Ophiodes*. Two tarsal bones (the os calcis and navicular) may take the form of long bones, as in *Galago* and especially in *Tarsius*. These two bones and the astragalus may be represented by a single bone, as in many Lizards, or may early unite with the tibia, as in almost all Birds. The astragalus may be represented by two bones, as in Urodeles. It may have an extra ossicle annexed to it, as in the male *Ornithorhynchus* and *Echidna*. Two extra ossicles may be attached to the tibial side of the foot, as in the true Porcupine (*Cercolabes*). The navicular may ankylose with one of the distal tarsal bones, as in the Ox and Deer, where it unites with the cuboid. The distal bones are less constant than the others, and they may ankylose with the metatarsals, as in Birds, the Chameleon, and the Three-toed Sloth. The cuboid may be represented by two bones, as in certain Urodeles. The internal cuneiform may be wanting, as in the Ox, or coalesce with the middle one, as in the Horse.

The *metatarsus* when fully developed consists of five rather long metatarsal bones, as in Man, and never of more. There may be but a single developed metatarsal, as in the Horse (the third) and *Charopus* (the fourth), or two fused together, as in the Sheep, Deer, &c., or three fused together, as in the Jerboa, or four so fused, as in many Birds. There may be but two metatarsals well developed, as in the Hog, or three, as in the Rhinoceros, or four, as in the Dog. They are never enormously elongated like the metatarsals of Bats, but they may all be extremely short, as in Land Tortoises and the Ichthyosaurus.

The *digits* vary in number, as has just been indicated with respect to the metatarsal bones sustaining them.

When one digit is wanting it may be the fifth, as in Birds, or the hallux (first or great toe), as in the Hare. The third and fourth digits may be only functional ones, as in the Ostrich; but the third may abort, leaving only the fourth, as in *Charopus*, or the fourth, leaving only the third, as in the Horse. The fourth and fifth may be the only functional ones, as in the Kangaroo. The hallux may be opposable to the other digits, as in Monkeys, Lemurs, Opossums, and Phalangers; or the first and fourth digits may be opposed to the second and third, as in Parrots; or the first and second to the third, fourth, and fifth, as in the Chameleon.

The phalanges of the digits are in Man's whole class always three to each digit except the hallux, which (like the pollex) has but two—save in the Orang, where it may have but one phalanx. They may be much more numerous than in Mammals, as in the pes of the Ichthyosaurus and Plesiosaurus. The numbers of the phalanges as we proceed from the first to the fifth digit may be 2, 3, 4, 5, 4, as in Lizards generally, or 1, 2, 3, 3, 2, as in the Salamander, or 2, 2, 3, 4, 3, as in the Frog. In Birds (where the fifth digit is more developed) the numbers of the phalanges, proceeding from the hallux, are mostly 2, 3, 4, 5; but they may be 2, 3, 3, 3, as in the Swallows, or 2, 3, 4, 3, as in the Goatsuckers.

Appendicular Skeleton of Fishes.

The Paired Limbs.—Most Fishes possess two pairs of limbs, known as the pectoral and ventral fins, which respectively correspond to the pectoral and pelvic limbs of higher Vertebrates. These limbs are attached to corresponding limb-girdles, whereof the pelvic girdle is always inferior in development and never attains the large relative proportions and fixed position of the pelvic girdle of non-Piscine Vertebrates.

Very often, however, the ventral fins are entirely wanting, and the pectoral fins are sometimes wanting also. In the latter case there is usually present more or less of a pectoral limb-girdle, though it may be, as in *Muraenopsis*, little more than a filament. In all non-Piscine Vertebrates the right and left limbs are symmetrically and equally developed, but in the Flat Fishes (*Pleuronectidae*) one pectoral fin may be larger than the other, or one may disappear, as in *Monochirus*.

The situation of the paired limbs is, in Elasmobranchs, Ganoids, and a good many Teleosts, similar to that they hold in higher Vertebrates, but in some other Teleosts (such as the Fishes on that account called "thoracic") the ventral fins are placed far forwards so as to come immediately behind the pectoral fins, while in yet other Teleosts (known on that account as "jugular" Fishes) they are placed even in front of the pectoral fins.

The *pectoral girdle* may consist of a simple cartilaginous arch, as in Elasmobranchs, or it may be composed, as amongst Teleosts, of two bones meeting ventrally, each being commonly regarded as a clavicle which is continued up dorsally to the skull by the intervention of a supraclavicle and a post-temporal. Besides these there is a cartilaginous element on each side which usually ossifies in two pieces, the upper one of which is reckoned as representing a scapula and the lower one a coracoid. These parts are annexed to the inner side of the clavicle, where also there is sometimes found a styliiform bone, more dorsally placed, called the post-clavicle.

The *pelvic girdle* is represented in Elasmobranchs by a transverse

cartilaginous structure formed of two separated or two medianly united pieces, each of which sometimes, as in *Chimara* and *Callorhynchus*, shows much resemblance to the innominate bone of higher Vertebrates in that it sends up a process simulating (and probably representing) the iliac element and possesses a sort of obturator foramen. In Osseous Fishes the pelvic girdle is normally represented by two innominate bones medianly joined, each of which may, by rare exception, as in *Lophius*, send up a tall ilium-like process. In no Fish, however, does the pelvis become solidly united with the spinal column. In the cartilaginous Ganoids it is very rudimentary, and each lateral portion (which has a slightly developed pubic and iliac process) is separated from its fellow on the opposite side, while in *Lepidosiren* there is only a single simple median cartilage with no iliac process.

The skeleton of the *pectoral limb*, or *fin*, of most Elasmobranchs consists of three considerable basal cartilages, placed side by side, articulating with the pectoral arch, and named—the propterygium, the mesopterygium, and the metapterygium. Of these the propterygium is proximal or anterior in position. To the distal ends of these are articulated a number of slender elongated more or less segmented radial cartilages, and to the distal portions of these are annexed the horny fin-rays which form the solid supports of the distal portion of the fin.

Sometimes there may be but two and rarely only one basal cartilage, which one must then be considered as representing the whole three condifferentiated. In *Ceratodus* there is a single basal cartilage followed by a series of small cartilages—secondary radial cartilages diverging from both sides of that series and having fin-rays annexed to them. In *Lepidosiren* the limb skeleton is still more simplified, consisting only of a single series of short slender cartilages with small fin-rays attached to one side alone, without the intervention of any radial cartilages.

In some Bony Fishes (e.g., *Polypterus*), the basal cartilages are more or less ossified, as are also most of the radials next them, while to these small cartilaginous radials are annexed, which support ossified fin-rays. In some other Ganoids certain of the radial cartilages articulate directly with the pectoral arch. In the *Teleostei* a few, not above five, more or less ossified cartilages lie side by side and articulate with the pectoral arch, and one or more rows of small cartilages succeed to them. These two elements represent the basal and radial cartilages of Elasmobranchs, and to them are articulated the relatively large fin-rays which make up the far greater part of the Teleostean pectoral limbs.

The skeleton of the *ventral fin* or *pelvic limb* is almost always more simple than that of the pectoral one. Only very rarely, as in *Ceratodus*, *Lepidosiren*, and *Callorhynchus antarcticus* (see *Trans. Zool. Soc.*, vol. x. p. 455, and plate lxxix. figs. 3 and 4), have they a close, or pretty close, resemblance. Generally the Elasmobranch ventral limb is supported by an elongated cartilage, the basipterygium, which articulates with the pelvic cartilages and bears on its ventral border a series of cartilaginous radialis with which the fin-rays are connected. In *Polyodon folium* there are only radials which support fin-rays but are not themselves supported by any basipterygium, nor is there any pelvic cartilage. In the *Teleostei* the fin-rays are directly attached to the osseous pelvic elements.

The Unpaired Appendicular Elements.—Besides the two pairs of limbs there are, as has been mentioned, certain azygous structures commonly known as the unpaired or azygous fins or limbs. They are only found in Fishes, and consist of the dorsal, caudal, and anal fins. These may all run one into the other and form a continuous fin fringe to the body from the head round the tail and forward again to the vent, as in Eels and many Gadoid and Elennioid Fishes. In most cases, however, there are one or two distinct dorsal fins, and an anal fin also distinct from the caudal one.

The structure of the *dorsal fin* in Elasmobranchs is singularly like that of their paired fins, inasmuch as it is supported by an elongated or segmented basal cartilage or cartilages, from the dorsal margin of which radial cartilages (generally elongated, slender, and segmented) proceed, having the fin-rays connected with them distally. The basal cartilages may or may not be directly connected or become confluent with the subjacent spinal skeleton. There may be (as in the second dorsal of *Callorhynchus antarcticus*) but a single longi-

tudinal series of more or less elongated cartilages side by side, like radial cartilages devoid of any subjacent basal cartilages. In the *Teleostei* the fin-rays may be osseous and in the form of more or less strong spines, or soft and of a horn-like consistency, and segmented both vertically and horizontally; and fin-rays generally consist of two (right and left) halves, which, although closely applied together for the greater part of their length, diverge proximally to embrace the skeletal element to which they are annexed. These latter elements in the *Teleostei* are small ossicles or chondrifications, termed "inter-spinous bones or cartilages." They extend upwards between the neural spines of the axial skeleton and the dorsal surface of the body.

Anal fins are essentially similar in composition to dorsal fins. The *caudal fin* is modified according to the condition of the posterior termination of the axial skeleton, the different condition of which it. Fishes has already been noticed (p. 112). Much-modified axial elements generally form the support of the fin-rays, but the numerous complex and varied conditions which these parts may present in different forms is a matter of ichthyology, which can hardly find a place in a general description of the Vertebrate skeleton.

Nature and Origin of Appendicular Skeletal Parts.—From the researches of the late Prof. Balfour it appears that the paired limbs arise as differentiations of continuous lateral folds or projections from the surface of the body, and the azygous fins arise as differentiated projections from its dorsal and ventral surfaces. Thus all these appendicular parts may be viewed as different species of one fundamental set of parts (pterygia), for the sum total of which the term "sympterygium" has been proposed (see *Trans. Zool. Soc.*, vol. x. pp. 481, 482). The paired limbs and azygous fins are of similar origin and nature. Separate narrow solid supports, in longitudinal series, and with their long axes directed more or less at right angles with the long axis of the body, were developed in varying extent in all these four folds or projections. These supports have, it would appear, very often united to form basal cartilages, the original single and united condition persisting in such forms as the ventral fin of *Polyodon* and the second dorsal of *Callorhynchus*, both already noticed.

The paired limbs are thus, in all probability, essentially peripheral structures which have become more or less closely connected with the axial skeleton. Their proximal parts uniting and growing inwards have often become directly connected with parts of the axial skeleton. Thus the limb-girdles seem to have arisen,—namely, as ingrowths from the basal cartilages of the limbs; and therefore the whole appendicular skeleton belongs to a different skeletal category from that of the head and spinal column or axial endoskeleton.

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SKELTON, JOHN, an eccentric English scholar and poet of the 15th century. Mr Dyce, the editor of his works, fixes his birth about 1460. His first essay in verse was a poem after the manner of Lydgate on the death of Edward IV. (1483). He lived to pay compliments to Catherine, wife of Henry VIII., to jeer at the Scotch over the battle of Flodden, and to make fierce attacks on Wolsey, and is supposed to have died in 1529. In general intellectual force, fierceness of invective, wildness

of buffoonery, and coarseness of language Skelton bears some likeness to Swift. But he stands by himself as one of the most eccentric and paradoxical characters in English literature. He began life apparently as the protégé of a pious, learned, and literary lady, the mother of Henry VII., who founded St John's College and Christ's College, Cambridge, and translated devotional works from the French. He was himself one of the most notable scholars of his time, was appointed tutor to Henry VIII., was

hailed by Erasmus (whether *ex officio* or *propter merita* is left to conjecture) as "unum literarum Britanniarum lumen et decus," was proclaimed *poeta laureatus* by both universities, and frequently applied this title as well as that of *orator regius* to himself without challenge. At about the age of forty he took orders, and was appointed rector of Diss in Norfolk, where he seems to have spent the last twenty-five years of his life. Yet this eminent scholar and churchman is the author of the oldest and the best drinking song in the English language—the drinking song in *Gammer Gurton's Needle*, and of one of the coarsest poems in any language—*The Tunning of Elinor Rummung*. He is the author of a satire against the clergy of his time—*Colin Clout*,—unsurpassed in pre-Reformation literature for direct and merciless ridicule, and of a satire against the great cardinal when at the height of his greatness—*Why come ye not to Court?*—boiling over with ferocious invective and insolent contempt. At the same time he had such a repute for rough wit and irregularity of life that he became the hero of a book of "merry tales." These mythical tales were probably in the mind of the historian who has described Skelton as a "ribald buffoon," "a profligate and ill-living wretch." Whether the real Skelton deserved such epithets is doubtful; his verse undoubtedly contains much that may fairly be described as ribaldry and buffoonery. It has not a trace of the chivalrous spirit of Chaucer, and his most characteristic form, known as Skeltonical verse, is wayward and unconventional—adopted as if in mad defiance of regular metre. Still, as Skelton himself claimed for it, "it has in it some pith."

"Though my ryme be ragged,
Tattered, and jagged,
Rudely rain-beaten,
Rusty and moth-eaten,
If ye take well therewith
It hath in it some pith."

Colin Clout, Why come ye not to Court? and *The Book of Philip Sparrow*—which Coleridge pronounced "an exquisite and original poem"—are written in this metre. *The Bouge* (ship) of *Court*, a satirical vision of personified abstractions, is more conventional in form, and was probably one of his earlier works. Both it and his interlude *Magnificence* show great power in the vivid description of character.

SKIMMER, the English name bestowed by Pennant¹ in 1781 on a North-American bird which had already been figured and described by Catesby (*B. Carolina*, i. pl. 90) as the "Cut-water,"—as it appears still to be called on some parts of the coast,²—remarkable for the unique formation of its bill, in which the maxilla, or so-called upper mandible, is capable of much vertical movement, while the lower mandible, which is considerably the longer of the two, is laterally compressed so as to be as thin as a knife-blade. This bird is the *Rhynchops nigra* of Linnæus, who, however, united with it what proves to be an allied species from India that, having been indicated many years before by Petiver (*Gazoph. Natura*, tab. 76, fig. 2), on the authority of Buckley, was only technically named and described in 1838 by Swainson (*Anim. Menageries*, p. 360) as *R. albicollis*. A third species, *R. flavirostris*, inhabits Africa; and examples from South America, though by many writers regarded as identical with *R. nigra*, are considered by Mr Saunders (*Proc. Zool. Society*, 1882, p. 522) to form a fourth, the *R. melanura* of Swainson (*ut supra*, p. 340). All these resemble one another

¹ "I call it *Skimmer*, from the manner of its collecting its food with the lower mandible, as it flies along the surface of the water" (*Gen. of Birds*, p. 52).

² Other English names applied to it in America are "Razorbill," "Scissorbill," and "Shearwater."

very closely, and, apart from their singularly-formed bill, have the structure and appearance of TERNS (*q.v.*). Some authors make a family of the genus *Rhynchops*, but it seems needless to remove it from the *Laridæ* (GULL, vol. xi. p. 274). In breeding-habits the Skimmers thoroughly agree with the Terns, the largest species of which group they nearly equal in size, and indeed only seem to differ from them in the mode of taking their food, which of course is correlated with the extraordinary formation of their bill. (A. N.)

SKIN DISEASES. These form a large and important class. In number they are very extensive, owing to the varied forms of morbid change which the skin texture may undergo, no less than to the different portions of the structure and its appendages which may be specially affected. Further, the modifications of the typical forms of these diseases which are to be observed have led to arrangements and classifications of very complex character and multiplied greatly their nomenclature. Skin diseases are regarded by the physician as of great importance, not only from the fact that morbid action in this texture must have a powerful influence on the general health and may bring in its train other maladies, but also because they are not unfrequently themselves the expression of constitutional conditions, inherited or acquired, the recognition of which is essential to their effectual treatment. In order to clearness of description it is necessary to make use of some method of classification. Various arrangements have been adopted by writers on the subject, but the following appears sufficient for the present purpose:—

- I. Disorders of the secreting apparatus (of the sebaceous and sweat glands);
- II. Disorders specially relating to nutrition (hypertrophies; atrophies; new formations; pigmentary changes);
- III. Inflammatory affections (erythematous; papular; vesicular; pustular; squamous or scaly);
- IV. Neuroses (nervous disorders);
- V. Parasitic affections (animal; vegetable).

I. DISORDERS OF THE SECRETING APPARATUS.—(1) *Of the Sweat Glands*.—The chief morbid conditions are excessive sweating (*hyperhidrosis*) and foetid sweating (*bromidrosis*). Excessive sweating is a symptom observed in various diseases, such as phthisis and rheumatic fever, but it may exist apart from such conditions, and either be general, affecting the whole body, or confined to a part, such as the axillæ, head, hands, feet, or, as in some rare instances, the one half of the body. Some persons habitually perspire, often to a great extent, on making any effort, yet never appear to suffer in health, although the discomfort is considerable. Excessive perspiration may often be prevented by the habitual use of the cold bath, and by tonics, such as iron, quinine, strychnia, &c. Locally, the use of astringent lotions of vinegar or a weak solution of lead will also be of service. Bromidrosis or foetid sweating is often associated with the former condition, and it too may be general or local. It most frequently affects the feet, especially in those who have much fatigue, and is a source of much personal discomfort as well as of annoyance to others. It is apparently due to rapid decomposition in the perspiration which has saturated the stockings, and for its treatment it is essential that these should be frequently changed and the feet washed several times a day, dried carefully, and dusted with some antiseptic powder, such as boracic or salicylic acid mixed with starch or French chalk. Hebra recommends the application to the feet of a composition of equal parts of olive oil and litharge plaster spread upon linen and used twice a day.

(2) *Of the Sebaceous Glands*.—*Seborrhæa* is a term

² For the structure of the skin see ANATOMY, vol. i. p. 897.

applied to describe an accumulation on the skin of the normal sebaceous secretion mixed up with dirt and forming scales or a distinct incrustation. On the head, where it is commonly seen, it may interfere with the nutrition of the hair and cause partial baldness. A form of this disease occurs in young infants. The main treatment is local, consisting in thorough cleansing of the parts. The crusts may be softened with oil and the affected skin regularly washed with soft soap and rectified spirit. The sebum frequently accumulates in the sebaceous ducts, giving rise to the minute black points so often noticed on the face, back, and chest in young adults, to which the term *comedones* is applied. A form of this disorder, but of larger size and white appearance, is termed *milium*. These affections may to a large extent be prevented by strict attention to ablution and brisk friction of the skin, which will also often remove them when they begin to appear. The retained secretion may be squeezed out or evacuated by incision and the skin treated with some simple sulphur application.

Acne is an eruption produced by inflammation of the sebaceous glands and hair follicles. It may occur in connexion with the preceding or independently, and shows itself in the form of red pimples or papules which may become pustular and be attended with considerable surrounding irritation of the skin. This affection is likewise most common in early adult life, and occurs on the chest and back as well as on the face, where it may, when of much extent, produce considerable disfigurement. It is apt to persist for months or even years, but usually in time disappears entirely, although slight traces may remain in the form of scars or stains upon the skin. Eruptions of this kind are sometimes produced by the continued internal use of certain drugs, such as the iodide or bromide of potassium. The treatment is similar to that for the previous affection, viz., brisk friction of the skin, short of producing irritation, and the application of a sulphur lotion or ointment. Attention to the general health, by suitable diet, tonics, exercise, &c., is a necessary adjunct. A variety of this malady, to which the name *acne rosacea* is given, is a more severe and troublesome disorder than that already mentioned. It is characterized by great redness of the nose and cheeks, accompanied with nodular enlargements on the surface of the skin, which produce marked disfigurement. Although often seen in persons who live too freely, it is by no means confined to such, but may arise in connexion with disturbances of the general health, especially of the function of digestion, and in females with menstrual disorders. It is apt to be exceedingly intractable to treatment, which is here too, as in the preceding form, partly local and partly constitutional. Of internal remedies preparations of iodine and of arsenic are sometimes found of service.

Molluscum contagiosum belongs to this class of skin diseases. It consists of an enlargement of the sebaceous glands and occlusion of the ducts, and is seen most commonly on the face, body, or hands in children, or on the breasts in women. It is said to be contagious, but it is a rare form of skin disease.

II. DISORDERS AFFECTING NUTRITION.—(1) *Hypertrophies*.—A *corn* (*clavus*) is a local thickening of the skin, generally occurring on the toes. There is hypertrophy of the epidermis, and in the centre of the corn there is usually a still denser mass, which, pressing down upon the subjacent sensitive true skin, causes pain and may give rise to inflammation and suppuration in the part. When situated between the toes the corn is softer than when on the free surface of the foot. The treatment consists in maceration of the hardened skin and the use of the knife or strong caustics. Salicylic acid combined with ether and collodion,

painted over the part, is said to be useful in the case of soft corns.

A *wart* (*verruca*) is an excrescence from the surface of the skin due to hypertrophy of the papillary layer of the cutis and of the epidermis. This form of growth may also occur on mucous membranes. Warts occasionally disappear spontaneously, or they may be excised, or carefully touched with some strong caustic acid or alkali.

Ichthyosis or *xeroderma* consists of a general thickening of the whole skin and marked accumulation of the epidermic elements, with atrophy of the sebaceous glands, giving rise to a hard, dry, scaly condition. It generally first appears in infancy, and is probably congenital. It differs in intensity and in distribution in different cases, and is generally little amenable to any but palliative remedies, such as the regular application of oily substances, although it is not a fatal malady.

For *elephantiasis Arabum*, see vol. viii. p. 126.

(2) *Atrophies*.—The chief of these relate to the hair. *Canities* or whitening of the hair consists in the non-formation of the pigmentary matter which is normally present in the substance of the hair, and occurs generally as a slow senile change. It may, however, take place prematurely, in which case it is often hereditary; or it may be associated with degenerative changes taking place in the system. It is occasionally seen to occur temporarily in very young persons in connexion with some defective condition of the general health. Its development suddenly has not unfrequently been observed as the result of some strong mental emotion.

Alopecia, or baldness, is the loss of hair, which is most commonly a senile change and irremediable, or on the other hand may be premature, occurring either hereditarily or in connexion with some previous constitutional morbid state (*e.g.*, after fevers or other blood poisons), in which latter case it may be only, although not always, temporary. It appears to depend upon atrophic changes affecting the hair follicle, including obliteration of the capillary vessels,—the result of which is that strong hairs cease to be produced, and only feeble, short, and thin hair (*lanugo*) is formed, which soon falls off and is not reproduced. Usually the whole skin of the hairy scalp undergoes thinning and other atrophic changes as well as the hair follicle. Sometimes the loss of hair occurs in distinct circular patches (*alopecia areata*), which tend to spread until the whole scalp is denuded. The treatment of temporary or premature baldness bears reference especially to any known conditions affecting the general health; and tonics, baths, and other means to promote a vigorous skin function are useful. Stimulating liniments containing spirits and cantharides, the regular cleansing and moderate brushing of the parts, the application to the scalp of the constant current of electricity, and various other remedies appear to be of service in promoting the growth of hair.

(3) *New Formations*.—(a) *Lupus* is a disease characterized by the formation in the skin of tubercles or nodules consisting of new cell growth which has no tendency to further development, but to retrograde change, leading to ulceration and destruction of the skin and other tissues in which it exists, and the subsequent formation of permanent white scars. *Lupus vulgaris* is most commonly seen in early life, and occurs chiefly on the face, about the nose, cheeks, ears, &c., but it may also affect the skin of the body or limbs. It first shows itself in the form of small, slightly prominent nodules covered with thin crusts or scabs. These may be absorbed and removed at one point, but they tend to spread to another. Their disappearance is followed by a white permanent cicatrix. The disease may be superficial in which case both the