resemble one another 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 *Laridae* (see Gull). 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 AND EXOSKELETON,** in anatomy. The skin (A.-S. *scinn)* is the covering of the whole body, and is continuous at the different orifices with the mucous membrane. It acts firstly as a protective layer, secondly as a regulator of the temperature, thirdly as an excretory organ and fourthly as a tactile and sensory organ in which nerves end.

The skin varies in thickness from ∙5 mm. in the eyelids to 4 or more mm. in the palms and soles; it is also very thick over the back of the body. Two main layers are recognized in the skin; superficially there is the scarf skin or epidermis and more deeply the dermis or true skin. The *epidermis* under the micro­scope is seen to consist of five layers. On the surface is the horny layer or *stratum corneum* (see fig. 1) composed of layers of scale­like cells, the walls of which are turned into the horny substance keratin. Deep to this is a thin layer of scale-like cells without keratin known as the *stratum lucidum.* Deeper still is a layer, the *stratum granulosum,* in which the cells are not so flattened and contain granules of a substance known as eleidin. In the fourth layer, *stratum mucosum* or *stratum Malpighii,* the cells are polygonal and are connected together by delicate prickle-like processes. It is in the deeper layers of these cells that the pig­ment of the negro’s skin is found. The fifth and deepest layer of the epidermis is the *stratum germinativum,* in which there is only one layer of columnar cells. The whole of the epidermis is non-vascular, and it will be noticed that as the different layers approach the surface the cells become more and more flattened. The *true skin, dermis* or *corium* is composed of a felted network of white fibrous tissue with a small number of yellow elastic fibres interspersed. It is divided into two layers.

The superficial or *papillary layer* lies next to the epidermis and is raised into a number of papillae or conical projections which fit into corresponding depressions on the deep surface of the epidermis. In sensitive parts like the palms and soles these papillae are specially prominent and form wavy fines, each of which consists of a double row between which the ducts of the sweat glands pass on their way to the surface. So large are the papillae in these situations that the epidermis is also raised into ridges, and these in the fingers form the characteristic whorls so valuable for purposes of identification. The papillae contain leashes of blood-vessels, and in some of them are special tactile corpuscles in which the nerves end (see Nervous System).

In the deeper or *reticular layer* of the true skin the fibrous feltwork is looser and encloses pellets of fat. It also contains a network of blood-vessels and nerves, and in some places a layer of striped or un striped muscle. Where hairs are present the hair follicles lie in this deeper layer, which gradually merges with the subcutaneous fatty tissue (see fig. 2).

As appendages of the skin arc found the hairs, the nails and the sebaceous and sweat glands.

*Hair.—*The hairs are found in man on the scalp, eyelids, eyebrows, armpits, pubic region, vestibule of the nose, external auditory meatus, face, ventral surface of the trunk and dorsal surfaces of the leg, forearm and hand; indeed the only places which are quite free from them arc the palms of the hands, soles of the feet and the glans penis. In some places, such as the armpits, pubic region and the face of the male they grow to a considerable length at and after puberty. They are of great anthropological interest since they differ in colour and texture in different races, sometimes being straight, sometimes wavy, sometimes curly. The amount and distribution of long hairs also vary with the race. In section it is only the straight hairs which are circular; wavy and curly hairs are oval. In the centre of each hair is the medulla or pith, though this is not always present; it is composed of nucleated cells containing pigment, fat and air spaces. Outside this is the fibrous layer or cortex, also containing pigment and air spaces, while most superficially is the cuticle made up of overlapping scales. The hair grows at its root from a *hair follicle* (see fig. 2), which is a tubular inpushing of the epidermis into the true skin or, in the case of large hairs, deeper still into the superficial fascia. It is divided into an *inner* and *outer root sheath,* the former representing the more superficial layers of the epidermis, the latter the deeper layers. At the bottom of the follicle the hair enlarges to form the bulb, and into the lower part of this a vascular papilla projects from the true skin. The cells of the hair are derived from, and are continuous at the bulb with those of the outer root sheath, and therefore with the deeper layers of the epidermis.

The hair follicle always projects somewhat obliquely into the skin, and attached to the side toward which it is leaning is a small band of non-striated muscular fibres called *arrector pili.* When this acts it diminishes the obliquity of the hair and so makes it “ bristle ” or "stand on end,” while a general con­traction of these small muscles leads to the familiar condition of "gooseflesh.”

*Nails.*—-The nails are specially thickened parts of the epidermis, and are divided into a root and a body. The former is concealed by a fold of skin, and the corium on which it lies is known as the *nail matrix.* The body of the nail also lies on the corium, or true skin, which forms the *nail bed* and is very sensitive. This body of the nail is formed by the stratum germinativum and stratum mucosum in its deeper part, and more superficially by the stratum lucidum, which is here very much thickened and converted into keratin or horn. Near the root of each nail is a semi-lunar area which is more opaque than the rest and forms the white *lunula.*

*Sweat Glands.—*Sebaceous glands are found wherever there are hairs, however rudimentary, and open by their ducts into the superficial part of the hair follicle (see fig. 2). Their deeper or secreting part divides into a number of bag-like alveoli composed of cells, which secrete oil droplets. There may be two or three glands to each hair follicle, and their size does not vary directly with that of the hair, since they are very large in the nose, where the hairs are quite rudimentary. They are also found on the labia minora and nipples, where no hairs are. *Sudoriparous* or sweat glands (sec fig. 2) are found all over the surface of the body,