skua, is not known to exhibit the remarkable dimorphism to which the two preceding are subject. It breeds abundantly in some seasons on the fells of Lapland, its appearance depending chiefly on the presence of lemmings *(Lemmus norvegicus),* on which it mainly preys. All these three species occasionally visit the southern coasts of Europe in large flocks, but their visitations are highly irregular.

(A. N.)

**SKULL,** the skeleton of the head, composed of 22 bones, 8 of which form the skeleton of the cranium, 14 that of the face. Except the lower jaw, which is movable, the bones are all firmly united by immovable joints. In the following article it is considered more profitable to treat the skull as a whole than to detail the bones separately, and for this purpose a normal European skull will be studied from in front *(norma facialis),* from above *(norma verlicalis),* from the side *(norma lateralis),* from behind *(norma occipitalis)* and from below *(norma basalis).* Afterwards the interior of it will be considered by means of sections.

The Skull from in front *(norma facialis)* (see fig. 1). The fore­head region is formed by the frontal bone, the two halves of which usually unite in the second year; sometimes, however, they fail to do so and then a suture *(metopic)* may remain to an advanced age. The lower limit of the forehead is formed by the upper margin of the orbit on each side, and by the articulation between the frontal and nasal bones near the mid line. At the junction of the inner and middle third of each supra­orbital margin is the supra­orbital notch for the nerve of that name. Above each supra-orbital margin is an elevation, better marked in adult males, called the supra- ciliary ridge, while between these ridges in the middle line is a slight prominence, the *glabella.* Below the fore­head the two *nasal bones* form the skeleton of the upper part of the nose; they articulate with one another in the mid line, but laterally they are joined by a suture to the nasal processes of the maxillae which run up to articulate with the frontal at the internal orbital pro­cess, thus forming the inner margin of the orbit.

Externally the malar bones (fig. 1, *g)* articulate with the frontal at the external orbital process and form the lower and outer quadrant of the orbital margin.

The *maxillae* or upper jaws (fig. 1, M) form the greater part of the skeleton of the face ; they complete the lower and inner quadrant of the orbit, and below the nasal bones leave the anterior nasal aperture *(apertura pyriformis)* between them, and project slightly at the middle of the lower border of this aperture to form the anterior nasal spine. About a quarter of an inch below the infra-orbital margin and just below the articulation with the malar the *infra­orbital foramen,* for the infra-orbital branch of the fifth nerve, is seen on each side. The lower parts of the maxillae form the *alveolar margin* in which all the upper teeth are set. Laterally each maxilla is prolonged out into a buttress, the *zygomatic process,* which sup­ports the malar bone.

Below the maxillae the *mandible* or lower jaw is seen in perspective (fig. I, *m).* The horizontal part or body is in two halves up to the second year, but after that complete bony union takes place, forming the symphysis. Above the body of the mandible is an alveolar margin containing the sockets of the lower teeth, while below, near the mid line, the bone projects forward to a variable extent and so forms the *mental prominence* (fig. 1, *0),* one of the special character­istics of a human skull. Below the second bicuspid tooth on each side is the *mental foramen* for the exit of the mental branch of the fifth nerve.

*The Orbit.—*Each orbit is a pyramidal cavity, the base of the pyramid being in front, at the orbital margin, and the apex behind, at the optic foramen, where the optic nerve and ophthalmic artery pass through. The four sides of the pyramid form the roof, floor, inner and outer walls of the orbit. The roof is arched from side to side and is made up of the frontal bone anteriorly, and the lesser wing of the sphenoid posteriorly. The floor is chiefly formed by the maxilla, though the malar forms a little of it in front. There is a groove for the infra-orbital nerve running forward in it, but before the margin of the orbit is reached the groove becomes a tunnel. The inner wall is antero-posterior and parallel with its fellow of the opposite orbit; in front it is formed by the nasal process of the maxilla, behind which the *lachrymal bone* articulates; together they enclose a vertical groove, for the lachrymal sac, which leads down into the nose, through the *naso-lachrymal canal,* transmitting the nasal duct (see Eye). Behind the lachrymal bone is the *orbital plate of the ethmoid* and in the suture between this and the frontal the *anterior* and *posterior ethmoidal foramina* are seen. Posteriorly the ethmoid articulates with the sphenoid, while at its lower and hinder part a small piece of the palate bone comes into the orbit. The outer wall of the orbit slopes backward and inward, the two opposite sides therefore converge as they run back. The malar bone, in front, and the great wing of the sphenoid, behind, form this wall. Between the roof and the outer wall there is a slit in the posterior part of the orbit called the *sphenoidal fissure* because it lies between the great and small wings of the sphenoid ; it transmits the third, fourth, first division of the fifth and sixth cranial nerves, as well as the ophthalmic vein.

Another slit called the *spheno-maxillary fissure* lies in the line of junction of the outer wall and floor, it leads into the spheno-maxillary and zygomatic fossae and transmits the second division of the fifth nerve and some veins.

The Skull from above *(norma verticalis).* When looked at from above the frontal bone is seen forming the anterior part of the vertex and articulating with the two parietals posteriorly by a nearly transverse serrated suture *(coronal suture).* Running back from the middle of this is the median *sagittal suture* extending as far as the lambda on the norma occipitalis. The point where the sagittal and coronal sutures join is the *bregma,* the site of the lozenge-shaped *anterior fontanelle* in the infant’s skull, but this closes during the second year of life. Small ossicles called *Wormian bones* are often found in the cranial sutures, and one of these (the *interfrontal* or *os anti-epilepticum)* is sometimes found at the bregma. About two- thirds of the way back the sagittal suture becomes less serrated and on each side of it the small *parietal foramen* may be seen. This only transmits a small emissary vein (see Veins) in the adult, but, as will be seen later, is of considerable morphological interest. As middle life is reached the cranial sutures tend to become obliterated and the bones can no longer be separated ; this fusion begins at the places where the sutures arc least deeply serrated, and as a rule the sagittal suture disappears between the two parietal foramina between thirty and forty years of age.

The Skull from the side *(norma lateralis).* \* On looking at the accompanying figure (fig. 2) it will be seen that the *Calvaria* or brain case forms all the upper part, while the face is below the anterior half. Taking the calvaria first the side view of the frontal bone (fig. 2, Fr) is seen extending back as far as the coronal suture *(cs).* Just above Fr is an elevation on each side, *the frontal eminence,* better seen in female than in male skulls. The junction between the frontal and malar (Ma) at the outer margin of the orbit has already been referred to as the external angular process and is an important