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Man's face and mimic language

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III The face

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Facial form and details

Concerning the fundamental facial form, attempts have been made similar to the skeletal frontal picture to produce a typological system such as is shown here in Fig. 13. But as already stated in the foregoing, it is chiefly the shaping of the soft parts covering the facial skeleton that determines the appearance of the facial picture.

To enable the reader to get a general idea of the details in the shaping of the soft parts that are primary at an appraisal of the facial picture, they have here been reported in a tableau (Fig. 14) with a schematic drawing (Fig. 15). The details marked by * must be regarded as variable or produced by mimicry (see Chapter V). We return to several of these facial details in the following. It need only be observed here that the region bordered by

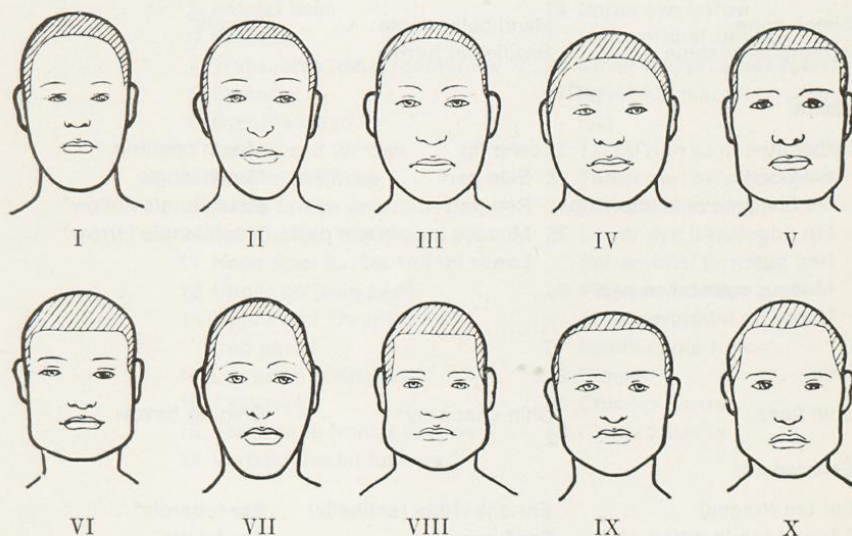


Fig. 13. Typological diagram for appraisal of facial form. (According to R. Martin 1928.)

Fig. 14. Table of facial details (cf. Fig. 15 and the special diagrams in Fig. 16, 20, 23, and 26.)

Forehead

Frontal boss*	Eyebrow	Vertical frontal furrows*
Glabella	Eyebrow head	Vertical frontal folds*
Supraglabellar furrow*	Transverse frontal furrows*	
Superciliary arch*	Eyebrow depression*	

Eyes

Upper eye furrow*	Lower eyelid	Medial corner of the eye
Lower eye furrow*	Tarsal part	Lacrimal caruncle
Upper eyelid	Lower eyelid furrow*	Semilunar fold
Cover fold	Lower eyelid margin	(Mongolian fold*)
Tarsal part	Lower eyelashes	Eyeball
Revelusion margin of cover fold	Palpebral fissure	White of the eye
Upper eyelid furrow*	Lateral corner of the eye	Iris
Upper eyelid margin	Lateral eye furrows*	Pupil
Upper eyelashes		

Nose

Nasal root	Posterior nasal wing furrow	Nasal bridge swellings*
Nasal bridge	Nasal wing margin	Transverse nasal root
Tip of the nose	Nostrils	furrows*
Nasal wing	Nasal septum	Transverse nasal bridge
Anterior nasal wing furrow	Nasal base	furrows*

Cheek

Cheek bone	Mandibular angle	Dimple*
Infraorbital triangle	Nasolabial furrow	

Mouth

Upper lip	Lower lip	Mouth opening
Skin part	Skin part	Mouth angle
Median groove of upper lip	Red part	Mouth angle hollow*
Lip ridge*	Mucous membrane part	Mouth angle furrow*
Red part	Lower lip furrow*	
Mucous membrane part		
Upper lip tubercle		

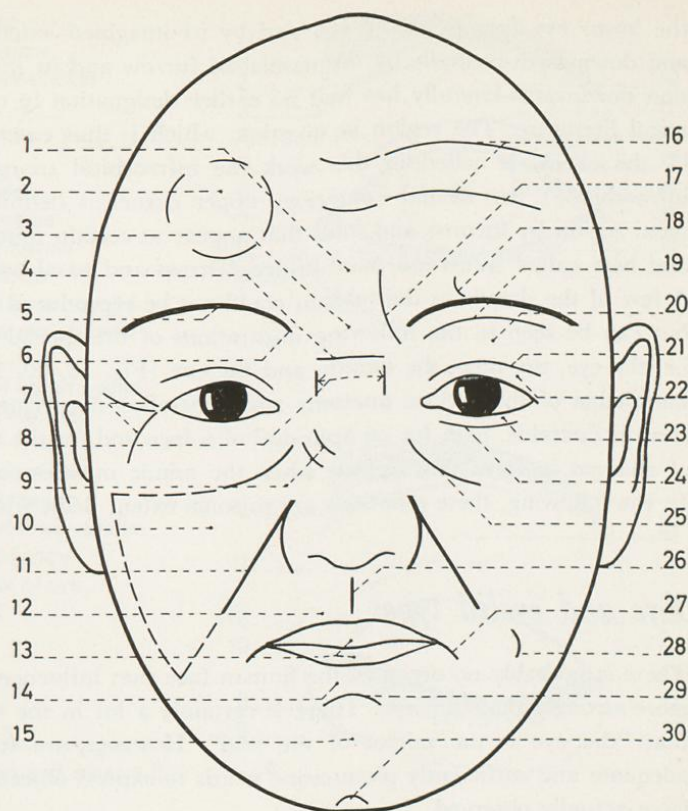
Chin

Chin boss	Chin concavity*	Chin-lip furrow
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External ear

Ear tag (tragus)	Ear anti-ridge (antihelix)	Ear tubercle*
Ear anti-tag (antitragus)	Ear furrow	Ear lobule
Ear ridge (helix)	Ear cavity	

* Inconstant or temporary details produced by the mimicry



- | | |
|-------------------------------------|---|
| 1 Supraglabellar furrow | 16 Transverse frontal furrows |
| 2 Frontal boss | 17 Vertical frontal furrows |
| 3 Glabella | 18 Eyebrow depression |
| 4 Transverse nasal root furrow | 19 Upper eye furrow (supraorbital furrow) |
| 5 Eyebrow | 20 Cover fold of upper eyelid |
| 6 Eyebrow head | 21 Revulsion margin of cover fold |
| 7 Lateral eye furrows | 22 Tarsal part of upper eyelid |
| 8 Root of the nose | 23 Tarsal part of lower eyelid |
| 9 Nasal bridge swellings | 24 Lower eyelid furrow |
| 10 Infraorbital triangle | 25 Lower eye furrow (infraorbital furrow) |
| 11 Nasolabial furrow | 26 Philtrum (median groove of upper lip) |
| 12 Upper lip (skin part) | 27 Mouth angle furrow |
| 13 Upper and lower lips (red parts) | 28 Dimple |
| 14 Lower lip (skin part) | 29 Chin-lip furrow |
| 15 Chin boss | 30 Chin concavity |

Fig. 15. Schematic frontal diagram of the face with facial details.

the lower eye furrow at the top and by its imagined extension laterally, and downwards-medially by the nasolabial furrow and its imagined extension downwards-laterally has had no earlier designation in current anatomical literature. The region in question, which is thus extended forwards by the cheek, is called in this work the infraorbital triangle (*trigonum infraorbitale*). Its medial (anterior) upper corner is delimited from the nasal region by furrows and folds that appear at certain mimic expressions and here called transverse nasal-bridge furrows and nasal-bridge swellings. A few of the details in the tableau could not be reproduced schematically, but can be seen in the following illustrations of the special facial organs, i.e. the eye, the nose, the mouth, and the ear (Fig. 16, 20, 23, 26). Some knowledge of the surface anatomy and most-often occurring variations in form is desirable, both for an appraisal of a face and for the understanding of changes in form that appear when the mimic muscles come into play. In the following, these questions are to some extent dealt with.

Eye and eyelid types

There is probably no organ in the human face that influences the observer more strongly than the eye. There is certainly a lot in the old expression that "the eye is the mirror of the soul". However, we frequently lack adequate and sufficiently picturesque words to express objectively what we have actually observed.

Fig. 16 a shows an open eye with its upper and lower eyelid (cf. also Fig. 14 & 15). The broken line also outlines projectively the margin of the eye-socket, which is described in connexion with the account of the facial skeleton. Often, larger or smaller portions of the upper and lower margins are also indicated in the soft parts by furrows, called the upper and the lower eye furrow (*sulcus supraorbitalis* and *sulcus infraorbitalis*). As Fig. 15 shows, the upper part of the upper eyelid has been called cover fold. This has a lower free revulsion margin. The lower part of the upper eyelid, which in the open eye is seen only as a more or less narrow margin below the revulsion margin of the cover fold, is called the tarsal part. A crescent-shaped fibrous lamina or tarsus is found inside it (cf. Fig. 17). The lower free edge of the tarsal part which borders the palpebral fissure is, of course, the upper eyelid margin. It carries the eyelashes. The lower eyelid is similarly constructed. However, we do not speak here of a cover fold; we refer instead to a narrow, crescent-shaped tarsal part delimited downwards from the remaining part of the lower eyelid by a merely indicated lower eyelid furrow. The free edge of the tarsal part, the lower eyelid margin, borders the palpebral fissure downwards and — similar to the upper eyelid margin — carries eyelashes. As shown in Fig. 17, the upper tarsus is considerably higher than the lower.

- 1 Eyebrow head
- 2 Upper eye furrow
- 3 Contour of eye-socket
(broken line)
- 4 Iris
- 5 White of eye
- 6 Semilunar fold
- 7 Lacrimal caruncle
- 8 Lower eyelid furrow
- 9 Lower eye furrow
- 10 Cover fold of upper eyelid
- 11 Revulsion margin of cover
fold
- 12 Tarsal part of upper eyelid
- 13 Upper eyelid margin
- 14 Pupil
- 15 Lateral corner of eye
- 16 Lower eyelid margin
- 17 Tarsal part of lower eyelid
- 18 Upper eyelid furrow
- 19 Medial corner of eye
- 20 Lower eyelid

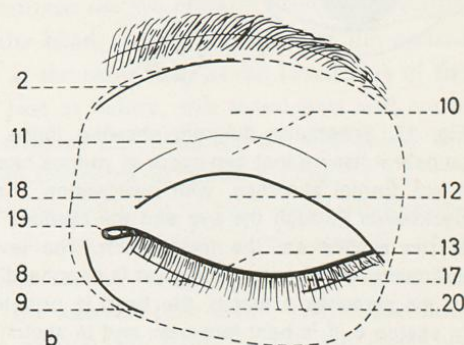
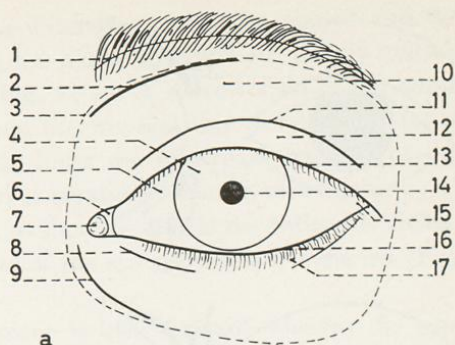


Fig. 16. Schematic diagram of left eye, open (a) and closed (b).

A more or less rich amount of fatty tissue is found in the cover fold of the upper eyelid; the entire tissue here, as in the lower eyelid, is throughout loose. Both eyelids also have a special musculature — we return to this later in connexion with the discussion of the mimic musculature.

When the eye is closed at blinking, the upper tarsal part falls down like a blind in front of the eyeball. Not until then is the tarsal part of the upper eyelid completely visible with the fine furrow, the upper eyelid furrow, which delimits the tarsal part upwards (Fig. 16 b). When, at blinking, the eye is again opened, the upper tarsal part is raised with the aid of a special muscle, the levator, which is attached to its upper margin, indicated in Fig. 17 by a broken-line arrow.

As described in the foregoing, the palpebral fissure is bordered upwards and downwards by the upper and the lower eyelid margin, respectively. The arch shaped curve of the upper margin is somewhat more accentuated than that of the lower margin. The edges meet laterally at an acute angle and form the lateral corner of the eye. At the medial corner of the eye, however, the palpebral fissure shows a slight inlet, the lacrimal lake. A

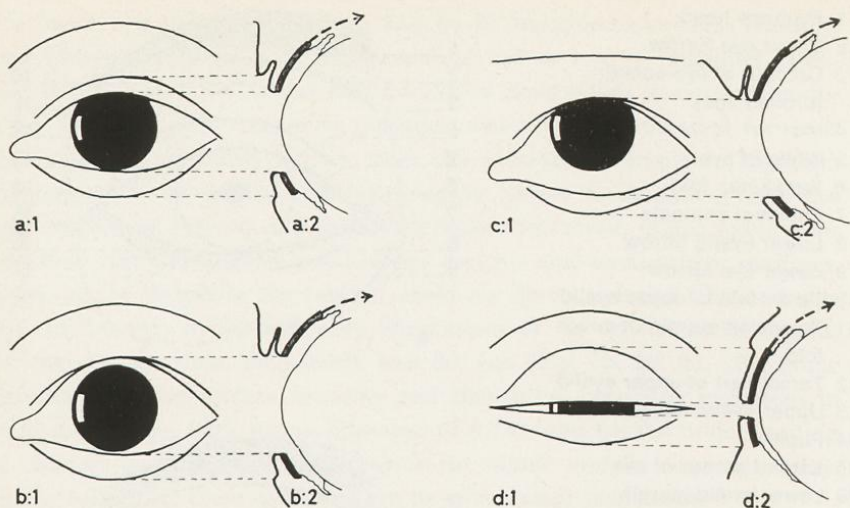


Fig. 17. Schematic diagram showing those changes in the appearance of the palpebral fissure that can occur at various head postures. The diagrams designated 1 are frontal sketches, with designation 2 are vertical sections from the front-backwards through the eye and the eyelids. The parts with heavy black markings in the eyelids are the tarsal parts. The levator muscle of the upper eyelid is indicated by an arrow. The gaze is supposed to be consistently directed forwards. In the sketches a and b, the head is oriented in the Frankfort horizontal plane, in sketch c, it is bent forwards, and in sketch d, bent backwards (see also text).

granule, about the size of a hemp seed, the lacrimal caruncle, and a small crescent-shaped mucosal fold (*plica semilunaris*) are found here. However, in persons belonging to the Mongolian race, the medial corner of the eye has its special formulation (see below).

The eyeball is situated in the eye-socket (*orbita*). Its anterior pole contains the transparent, hour-glass-shaped cornea, through which the iris is visible. The colour of the iris varies from blue to brown, with several different nuances as intermediary colours. The centre of the iris is furnished with a black hole, the pupil, through which light rays penetrate; its size varies similar to the diaphragm ("the iris diaphragm") of a camera. If the pupil in certain light appears to be not black but grey, the reason is usually grey cataract in the eyelens situated behind the pupil. This part of the eyeball with cornea, iris, and pupil—important to us—is here, for the sake of simplicity, called merely iris. Peripherally of the iris (thus really peripherally of the cornea) we find the fibrous membrane of the eyeball (*sclera*) covered by the conjunctiva. Its white lustrous character is responsible for the expression: the white of the eye.

When the head is placed in the Frankfort plane (see above) and the eyes are directed straight forward, the iris in a normal eye usually touches the margin of the lower eyelid (Fig. 17 a). A narrow strip of the white of the eye might be visible between the iris and this margin. The tarsal part of the upper eyelid, however, hides the uppermost segment of the iris. At powerful tension of the earlier-mentioned levator muscle, this tarsal part can be raised a trifle further, so that not only is the entire iris visible, but also a narrow strip of the white of the eye appears above the iris (Fig. 17 b).

If the head in the Frankfort plane is bent forward whereas the eyes remain directed forwards, the following occurs. Similar to the head, the eyeball undergoes a change in position in the orbita. However, the orientation of the eyeball is not changed: the eye remains directed forwards. In relation to the other parts of the head, the anterior pole of the eyeball can be said to be turned upwards at the same time as the tarsal part of the upper eyelid is somewhat raised. Just as before, this tarsal part will cover the upper part of the iris. The strip of the white of the eye below the iris, however, becomes considerably increased in breadth (Fig. 17 c).

If the head in the Frankfort plane is, instead, bent backwards whereas the gaze remains directed forwards, a change in position of the eyeball — but not in orientation — occurs similar to the foregoing. In relation to the other parts of the head, however, the anterior pole of the eyeball can now be said to be turned downwards so that the lower eyelid will cover an increasingly larger part of the iris. Precisely as in a "sleeping doll", the tarsal part of the upper eyelid follows this downward turning of the eyeball. In connexion with this, the palpebral fissure narrows increasingly and finally closes, at the same time as the tarsal part of the upper eyelid reaches the lower eyelid (Fig. 17 d).

We will return in the following to the changes that otherwise occur concerning the appearance of the palpebral fissure and the eyelids in connexion with activity in the mimic musculature.

With respect to the position of the eye in the face, a distinction can be made between the superficially and the deep lying eye, but naturally, all conceivable intermediate forms occur between these two types. But it must be noted that the cover fold at the superficially lying eye has a more vertical position and is therefore fully visible when the eye is seen from the front (Fig. 18 a) whereas in a deep-lying eye, it has an almost horizontal position and is therefore hardly seen when looked at from the front (Fig. 18 b). In persons belonging to the Mongolian race, the eye is most often lying superficially (Fig. 18 c). But in these persons, the medial corner of the eye has quite a special formulation: the upper eyelid margin here most often combines at an acute angle with the lower eyelid margin, forming the so-called Mongolian fold or epicanthus, which from the front hides the lacrimal lake.

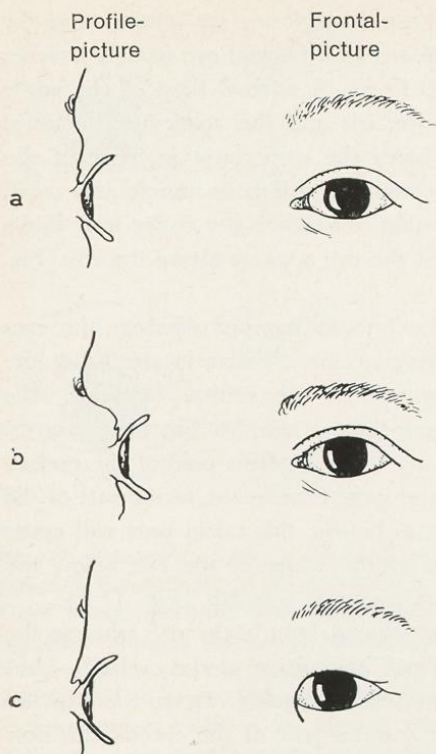


Fig. 18. Schematic diagram showing normally lying eye (a), deeply lying eye (b), and Mongolian eye (c).

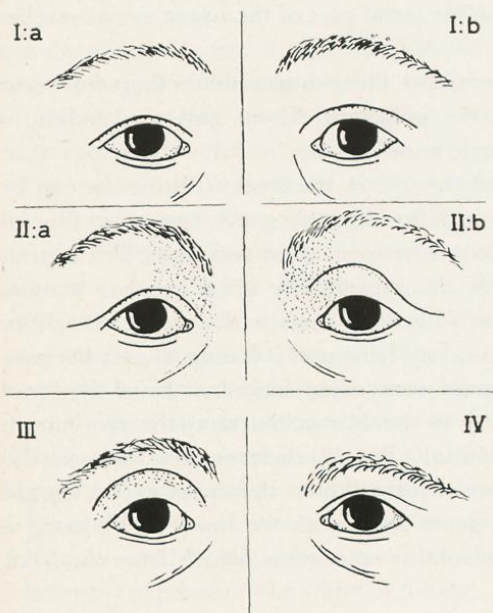


Fig. 19. Schematic diagram of different types of eyelids. The diagram is based on the description given by F. Lange.

Numerous different types of upper eyelids exist, and the author has tried to illustrate, in a simple drawing, the most important (Fig. 19). Here, the ideas of the German physician F. Lange are mainly used as basis. Type I is a fairly high and well-filled cover fold of uniform breadth, with either a narrow tarsal part as in type I a of the figure, or a somewhat higher tarsal part as in type I b. In type II, the cover fold in its medial part has lost most of its fatty tissue and has therefore sunk inwards, whereas its lateral part has a more abundant fatty tissue and therefore curves forwards in the form of a thickening. This type also has a variant, with a low (type II a) and a somewhat higher (type II b) tarsal part. Type III is dominated by a very high tarsal part and a relatively narrow or low cover fold. In type IV, the entire upper eyelid is very low; therefore the eyebrow will be very close to the palpebral fissure. In a front-view portrait, however, it can often be almost impossible to determine whether this type IV is actually present or whether it is only simulated by a deep-lying eye.

Nose and nasal types

In connexion with the description of the facial skeleton, the two nasal bones at the upper part of the pear-shaped nasal cavity were mentioned. The shape of these bones influences also the form of the upper part of the nasal bridge. Below the nasal bones, however, there is a nasal skeleton constructed of a number of smaller cartilaginous plates. The nasal skeleton together with the covering soft-part layer determines the form of the other part of the nose (see Fig. 20). The basic shape of the nose has for long been compared to an irregular three-sided pyramid. It has three free surfaces: the lower surface with the two nostrils (nares) and the two side surfaces. The pyramid is attached to the face through its basal surface. The

Fig. 20. Schematic diagram of the nose and its various details.

- | | |
|-------------------------------------|--------------------------------|
| 1 Glabella | 6 Tip of the nose |
| 2 Root of the nose | 7 Nostril and nasal septum |
| 3 Nasal bridge (bony part) | 8 Nasal base |
| 4 Nasal bridge (cartilaginous part) | 9 Nasal wing |
| 5 Anterior nasal wing furrow | 10 Posterior nasal wing furrow |

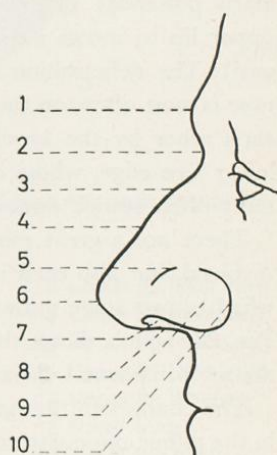




Fig. 21. Variations in the lower nasal surface with the nostrils (according to A. Rauber & Fr. Kopsch 1936.)

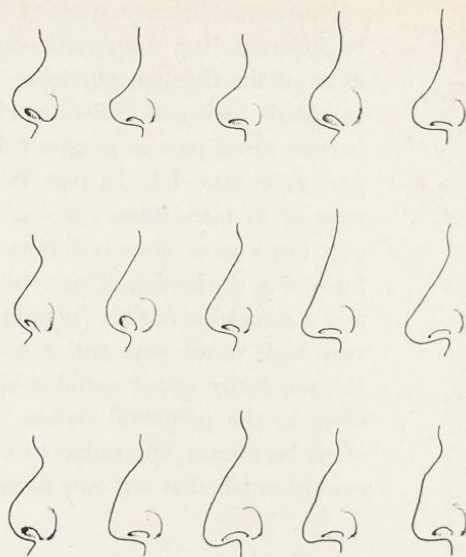


Fig. 22. Typological diagram for judging nasal type (according to R. Martin 1928).

lateral surfaces are combined in the median plane to a nasal bridge (*dorsum nasi*) whose lower part merges into the tip of the nose (*apex nasi*). At the top, the nasal bridge, as well as the lateral surfaces, terminates at the nasal root (*radix nasi*). Furthest down on each lateral surface, a small rounded, or beanlike, swelling — the nasal wing (*ala nasi*) — is found, delimited from the side surface by a shallow furrow, the anterior nasal wing furrow (*sulcus alaris*). A deeper and sharper posterior nasal wing furrow (*sulcus alaris posterior*) delimits the nasal wing backwards towards cheek and upper lip to merge into the lower free margin of the nasal wing (*margo nasi*). The delimitation of the nasal wing forwards towards the tip of the nose is most often, on the other hand, blunt. The nostrils are separated from each other by the lowest part of the nasal partition (*septum nasi*). Its lower free edge, whose contour in profile is called nasal base (*basis nasi*), most often stands somewhat lower than the nasal wing margin.

There are a great many nasal shapes: not only are general proportions involved, but also each individual detail. This is illustrated here in Fig. 21, which shows some variations of the lower surface with the nostrils, and in Fig. 22, which shows the German anthropologist R. Martin's diagram of the most important variations of the nasal profile.

The changes in the nasal shape that occur in connexion with the activity in the mimic musculature are discussed later.

Mouth and lip types

Few words are usually devoted to the lips and their structure in the ordinary anatomical textbooks. The lips, however, are quite complicated with their system of different muscle fibres. But the structure makes it possible for the mouth opening and the lips, more than any other facial organs, to change appearance and form. Later, we return more fully to this matter; at this point, a limited information about the external anatomy of the lips, as well as a short survey of certain lip types, is given.

In both the upper lip and the lower lip, three different parts can be distinguished: the skin part, which fundamentally has the same character as the cheek and the chin; the soft structure that lacks hairs and is red in colour; the redder mucous membrane, hardly visible when the mouth is closed (not shown in Fig. 23). In rare instances, the borderline between

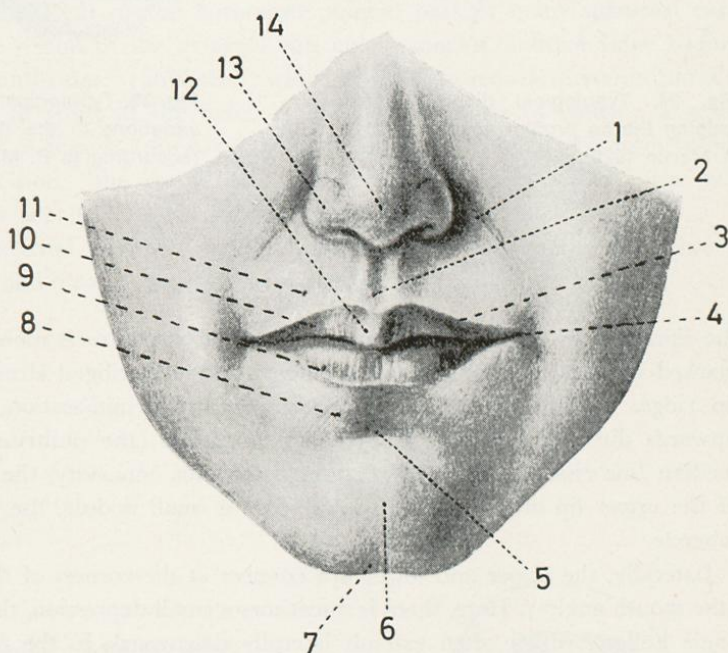


Fig. 23. Lower part of the face with its various soft parts (according to A. Rauber & Fr. Kopsch 1936).

- | | |
|---------------------------------------|--------------------------|
| 1 Nasolabial furrow | 8 Lower lip (skin part) |
| 2 Philtrum (median groove, upper lip) | 9 Lower lip (red part) |
| 3 Lip ridge | 10 Upper lip (red part) |
| 4 Mouth angle | 11 Upper lip (skin part) |
| 5 Chin-lip furrow | 12 Upper lip tubercle |
| 6 Chin boss | 13 Nasal wing |
| 7 Chin concavity | 14 Tip of the nose |

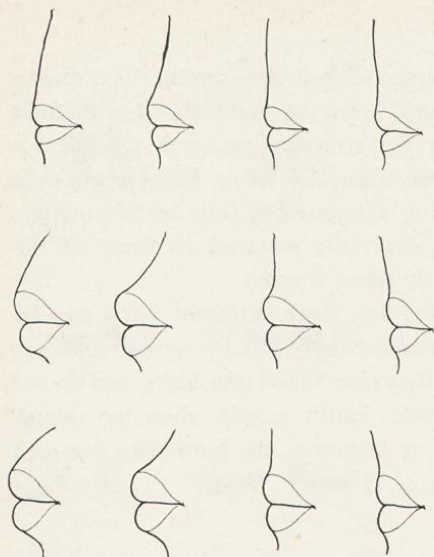


Fig. 24. Typological diagram for judging the lip profile (according to R. Martin 1928).

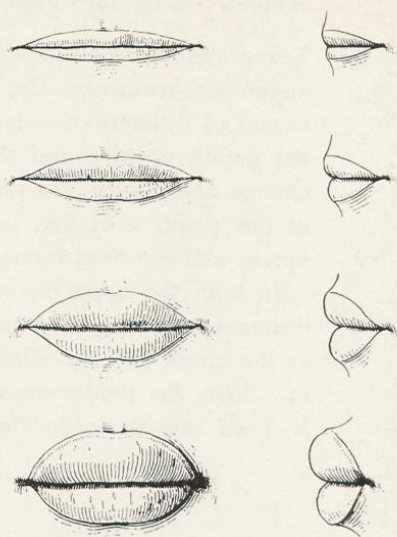


Fig. 25. Typological diagram for judging variations in the thickness of the lips (according to R. Martin 1928).

the skin part of the upper lip and the soft red structure is more strongly marked by the presence of a very narrow and thin ridged structure, the lip ridge. The mentioned borderline shows, in its mid-section, a weak, upwards directed concavity from which a groove (the philtrum) at the median line rises to the nasal septum. Below this concavity, the soft part of the upper lip often has in its lower part a small nodule, the upper lip tubercle.

Laterally, the upper and lower lips connect at the corners of the mouth (the mouth angles). Here, there is sometimes a small depression, the mouth-angle hollow, which often extends laterally downwards in the form of a small furrow, the mouth-angle furrow (*sulcus labiomarginalis*).

The appraisal of the skin contour of the upper lip in the profile picture, when the head is oriented in the Frankfort plane, plays a definite role in connexion with anthropological investigations. The mentioned German anthropologist R. Martin has created a diagram for the purpose (see Fig. 24) in which the position, height, and curve of the contour is considered. He has made up a similar diagram for the appraisal of the thickness of the lips (see Fig. 25). The two diagrams beautifully illustrate the great variation in form and need little or no comment.

Ear

The anatomy of the ear will be briefly touched upon, limited to the external ear (*auricula*).

The skeleton of the external ear consists of a cartilaginous plate covered with skin (see Fig. 26). The general shape is egglike with the smaller end downwards. At about the middle of the anterior part of the ear, there is a small tongue-like protrusion, "the ear tag" (*tragus*), and immediately behind this, a hollow, "the ear cavity" (*concha*). In its anterior part, the external auditory canal begins and leads into the inner ear. From the upper part of the hollow and above the auditory canal, a ridge-shaped structure (*helix*) starts, which then runs — like a rolled hatbrim — round the anterior, the upper, and finally, the posterior edge of ear and ends about level with the auditory canal. At the posterior upper part of this ridge, there is sometimes a slight swelling, the ear tubercle (*tuberculum Darwini*), which is thought to be reminiscent of the outermost pointed part of many mammal ears. From the region of the external ear, above *concha*, another ridge begins, "the ear anti-ridge" (*antihelix*), which runs backwards-downwards, parallel with but in front of the *helix*. At the lower border of *concha*, a small protrusion is found, "the ear anti-tag" (*antitragus*), separated from *tragus* by an incision, "the ear furrow" (*incisura intertragica*). The lower part of the ear is called the ear lobule (*lobulus auriculae*).

The external ear has certain small muscles, which are rudimentary, however, and have no practical importance for man.

Fig. 26. Diagram of the left external ear.

- 1 Ear ridge (*helix*)
- 2 Ear tag (*tragus*)
- 3 Ear anti-tag (*antitragus*)
- 4 Ear tubercle
- 5 Ear anti-ridge (*antihelix*)
- 6 Ear cavity
- 7 Ear furrow
- 8 Ear lobule

