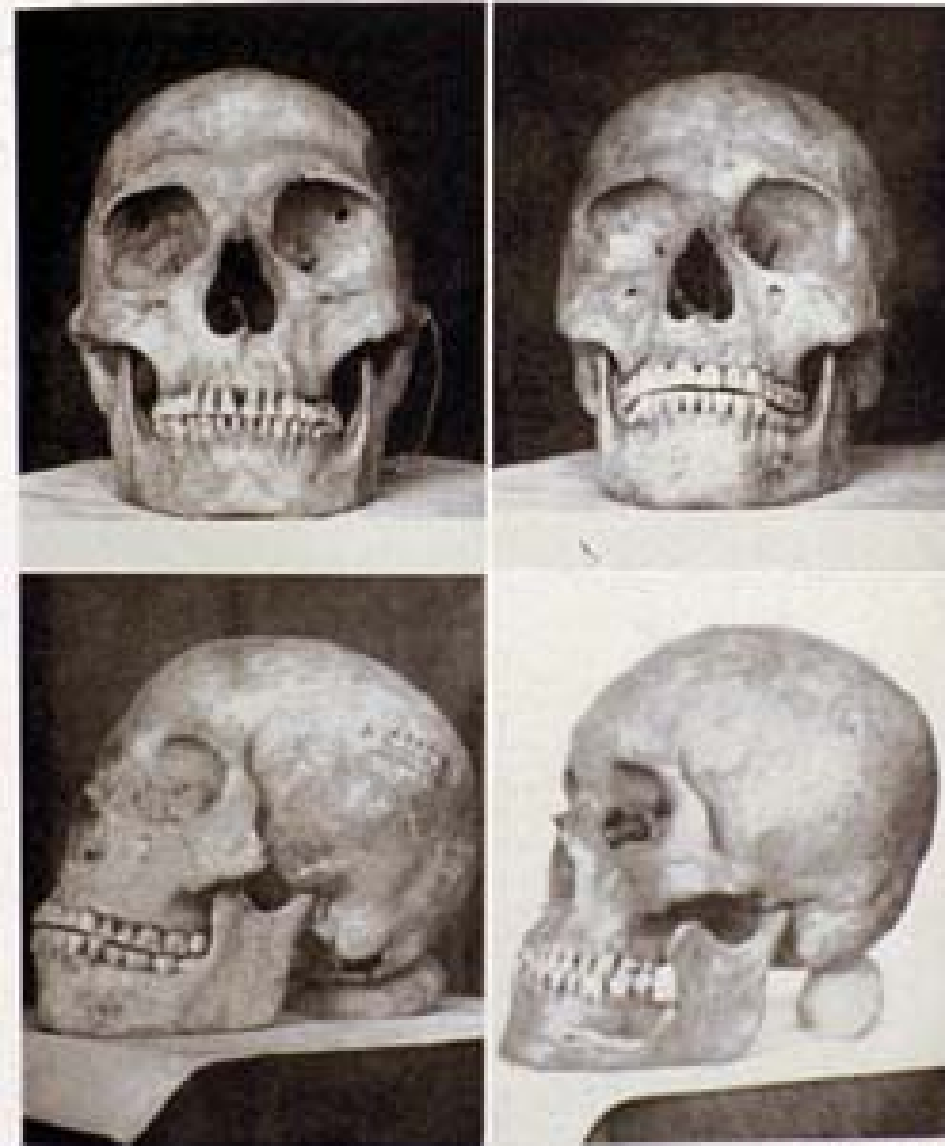


Mammals

- There are **4640** species of mammals. Most are ideal.
 - Humans are but one species.
- Mammals are unique in that they have an epiglottis.
- All species breastfeed their young.
 - Dr. Olaf Oftedal - National Zoological Park.
- Humans are the only mammal with any significant malocclusions or decay in their teeth.
- Wild animals rarely have decay (or malocclusions?).
 - Dr. Peter Emily - Father of Veterinarian Dentistry.
- No processed foods, bottles or pacifiers in the wild.

Modern is not always better!

Facial form and dental occlusion
prior to bottles and pacifiers.



Indian skulls studied by Dr. Weston A. Price. Each skull has nice occlusion and no decay.

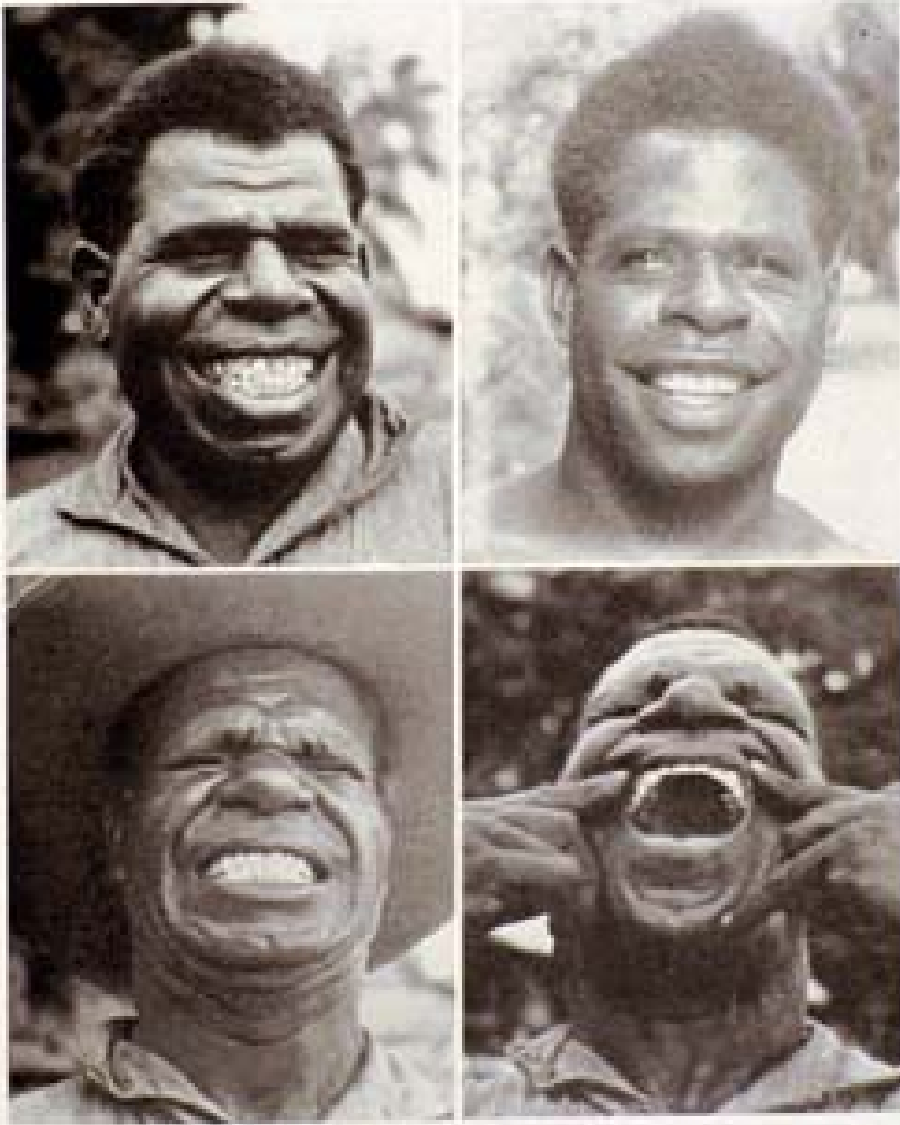
Nutrition and Physical Degeneration, 6th Ed., Keats Publishing, 1997.

FIG. 14. The Indian skulls that have been uncovered in many parts of the United States and Canada show a degree of excellence comparable to those seen in this figure. These levels of excellence were the rule with them, not the exception as with us. The parents of these individuals knew what they and their children should eat!



Peruvians studied by Dr. Weston A. Price showing off their smiles. Note nice “U” shaped arches and no decay.

Nutrition and Physical Degeneration, 6th Ed., Keats Publishing, 1997.



Torres Strait natives
studied by Weston A.
Price showing off their
beautiful smiles and teeth.

Nutrition and Physical
Degeneration, 6th Ed.,
Keats Publishing,
1997.



B6 70,000 year old AMUD skull with nice occlusion and no decay.



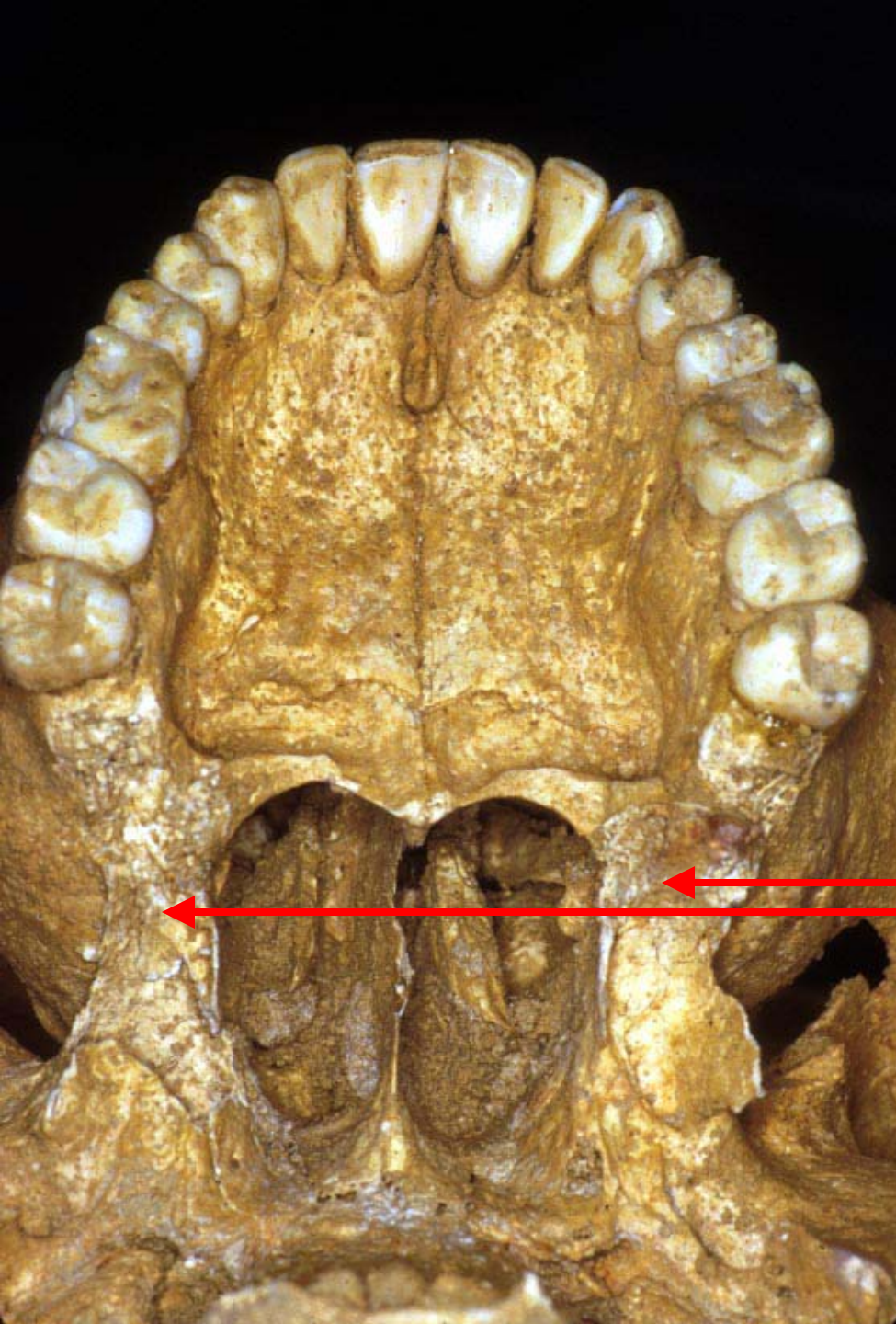
Ideal facial form and occlusion of a prehistoric skull at the Smithsonian.



B8 Close up of teeth of previous skull. Perfect occlusion and no decay.



B9 Classic prehistoric skull with wide palate and arch



Prehistoric skull with wide palate and large posterior nasal aperture. There is good width between the pterygoid plates.

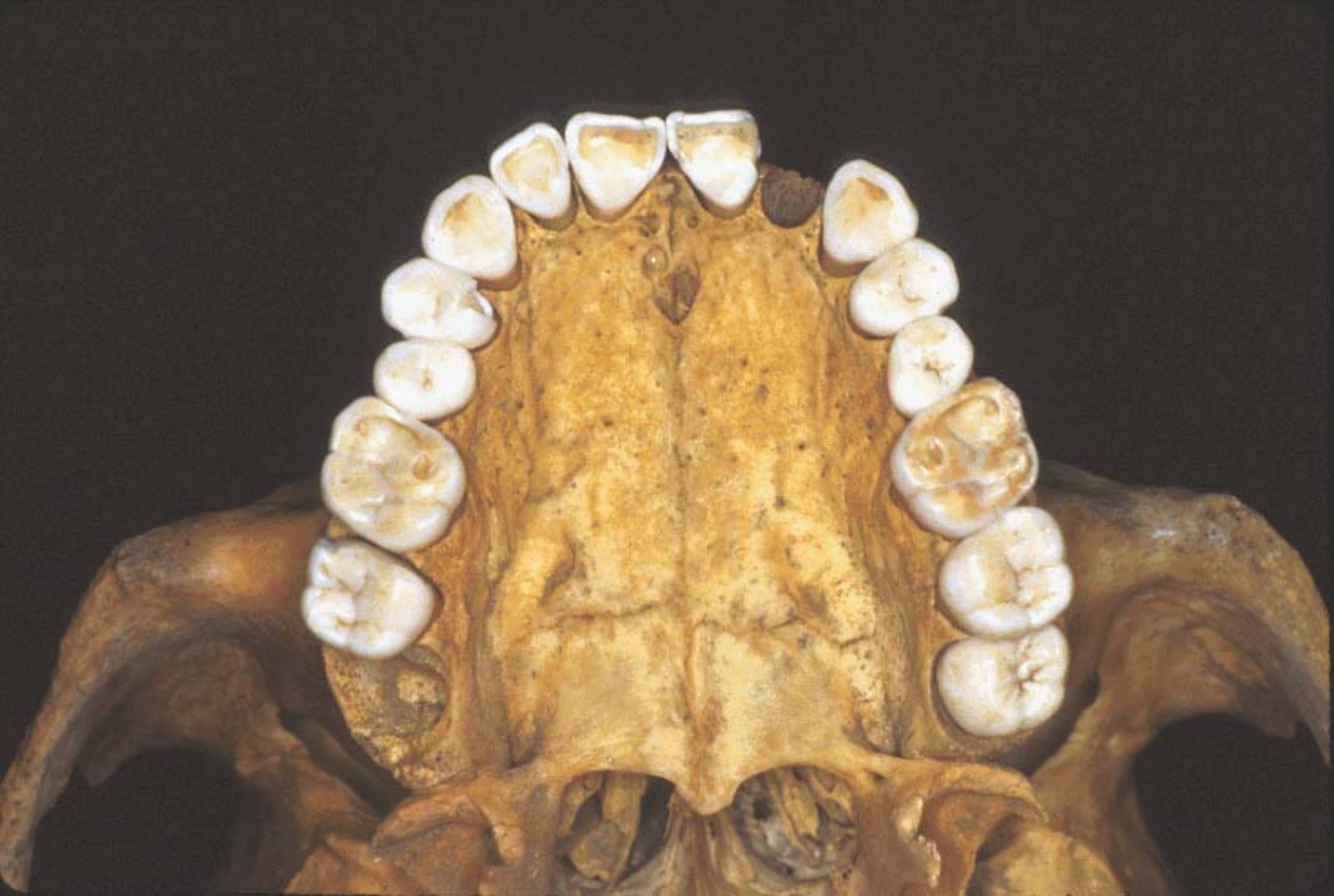
This allows for a wide beginning of the soft tissue portion of the airway.

Pterygoid plates

(Butterfly shaped bones on either side of the posterior nasal aperture.)



Prehistoric Native American skull
evaluated at the Smithsonian.



B12

Full “U” shaped palate of previous skull. No decay.



B1

Prehistoric Native American Indian skull from South Dakota



B14

Prehistoric adult mandible with nice arch form and no decay.



Prehistoric infant skull
examined at Smithsonian
Natural Museum.



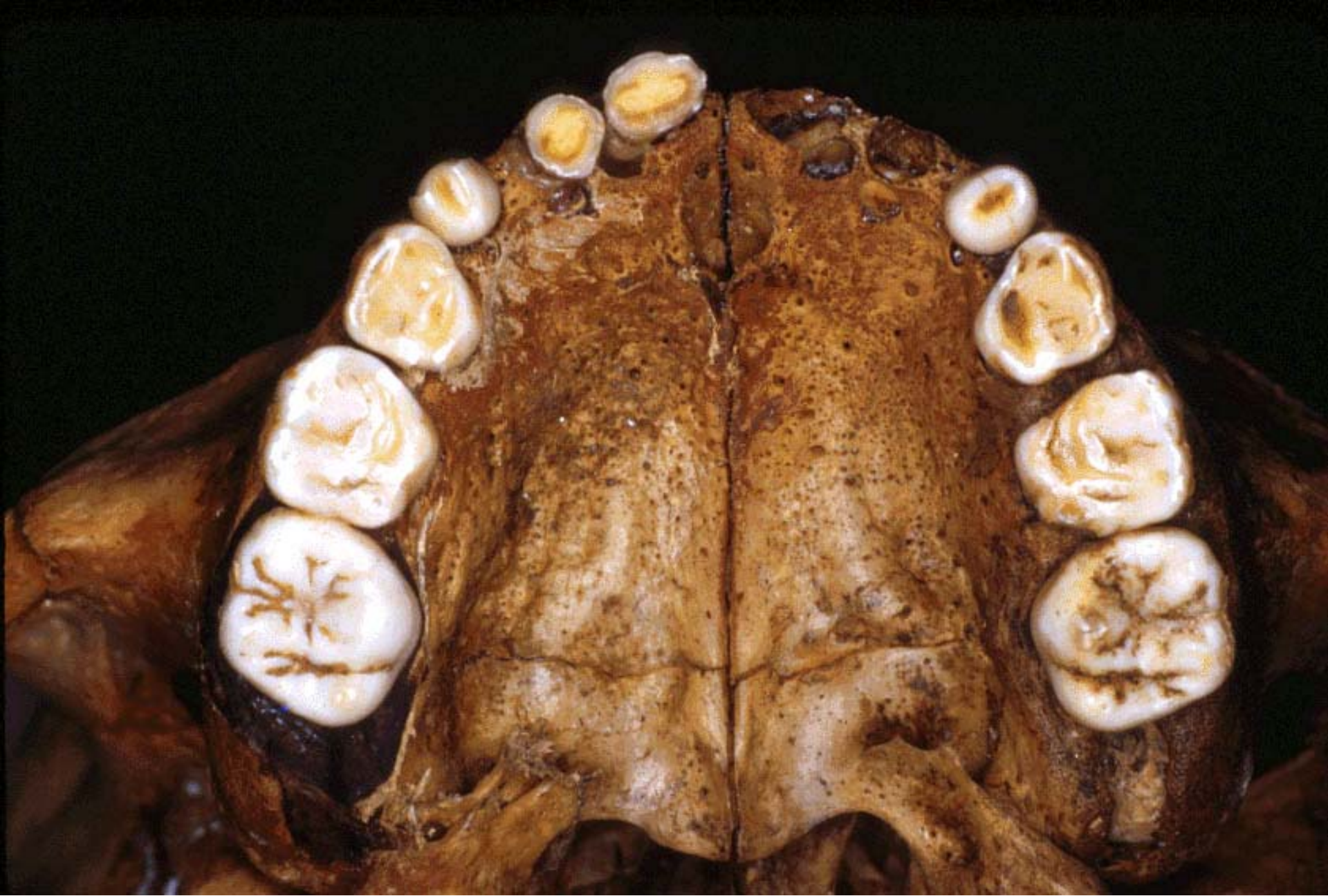
B16

Prehistoric infant skull - no decay



B17

Prehistoric infant skull - no decay



B18

Prehistoric infant skull - no decay



B19 Defective teeth - skull from the 1930's.



Skull from 1940s.

Skull demonstrates how a high palate and narrow arch can result in a small posterior nasal aperture.



B21 Close-up of small posterior aperture (1940).



Prehistoric

B22



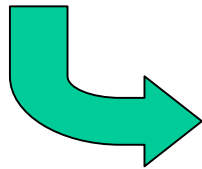
“Modern” - 1940s

The connection:

Bottle-feeding

Excessive thumb sucking

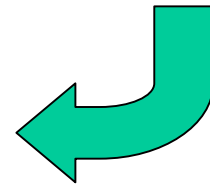
Pacifier use



**Similar signs
and symptoms**

Snoring

Sleep apnea



AAPD Vision Statement - 1996

- “89% of youth, ages 12 - 17 years, have some occlusal disharmony.”
- “16% of youth have a severe handicapping malocclusion that requires mandatory treatment.”

Pediatr Dent, Spec Edition: Ref Manual 1995-96, 17(6).

Pacifier use

- 85% of children in her study used pacifiers by age one month. Children weaned from breastfeeding early use a pacifier more often than those who are breastfed longer.

Victora CG, Behague DP, et al. Pacifier use and short breastfeeding duration: cause, consequence, or coincidence? *Pediatr.* 1997 Mar;99(3):445-53.

Incidence of malocclusions in infants

Malocclusion was found in 35% of 3-year-old children

- anterior open bites in 27%
- unilateral cross bites in 8%

Paunio P et al. The Finnish competence study: The effects of living conditions on sucking habits in 3-year-old Finnish children and the association between these habits and dental occlusion. *Acta Odontol Scand* 1993; 51(1):23-29.

Labbok / Hendershot article:

- **Principle finding** - the longer the duration of breastfeeding, the lower the incidence of malocclusion.
- Bottle feeding leads to a habit of forward tongue thrusting and a weakened development of the orbicularis muscles.
- There is a significant decrease in tongue thrusting with an increased duration of breastfeeding .

Labbok M et al. Does breast-feeding protect against malocclusion? *Am J Prev Med*, 1987;3(4):227-32

Impact of infant sucking habits

- Digit and dummy sucking resulted in increased tendency to tongue thrust.
- Tongue thrust related to: open bites, overjet, and Class II malocclusion.
- Sucking habits influence the etiology of malocclusion.

Melsen B, et al., Sucking habits and their influence on swallowing pattern and prevalence of malocclusion; *European J of Orthodont*, 1979, 1(4):271-280.

***** EXTREMELY IMPORTANT POINTS *****

Craniofacial Development

- Largest increase occurs within the first 4 years of life.
- Is 90% complete by 12 years of age.

Shepard, J. et al. Evaluation of the Upper Airway in Patients with OSA. *Sleep* 1991, 14(4):361-71. (Research done at Mayo)

*****TREATMENT/PREVENTION OF OSA/SDB
MUST BE STARTED EARLY IN LIFE!*****

Article traces the development of the adult human pharynx from air-breathing vertebrates other than man, through the evolutionary development of modern man and through maturation from infancy to adulthood. **A must read article.**

Laurence I. Barsh, DMD, The Origin of Pharyngeal Obstruction during Sleep, *Sleep and Breathing* 1999; 3(1)17-22.

References Dr. Edmund Crelin's research.

Edmund S. Crelin, Ph.D., D.Sc.

- Faculty member at Yale, 1951-1988
- Professor of Anatomy, Dept. of Surgery.
- Chairman: Human Growth & Development.
- Author of 168 research articles
- Author of 3 books.
- Author of 5 CIBA Clinical Symposia.
- 3 awards at Yale as “outstanding teacher”.



Figure 56. Right half of the head of a full-term human newborn male infant cut in the midplane. The epiglottis (arrow) is in direct contact with the soft palate (S) because the larynx is locked into the nasopharynx. The tongue (T) is located entirely within the oral cavity. Original symphysis of the mandible (M).

Key statement by Dr. Crelin: “The tongue (T) is located entirely within the oral cavity”.



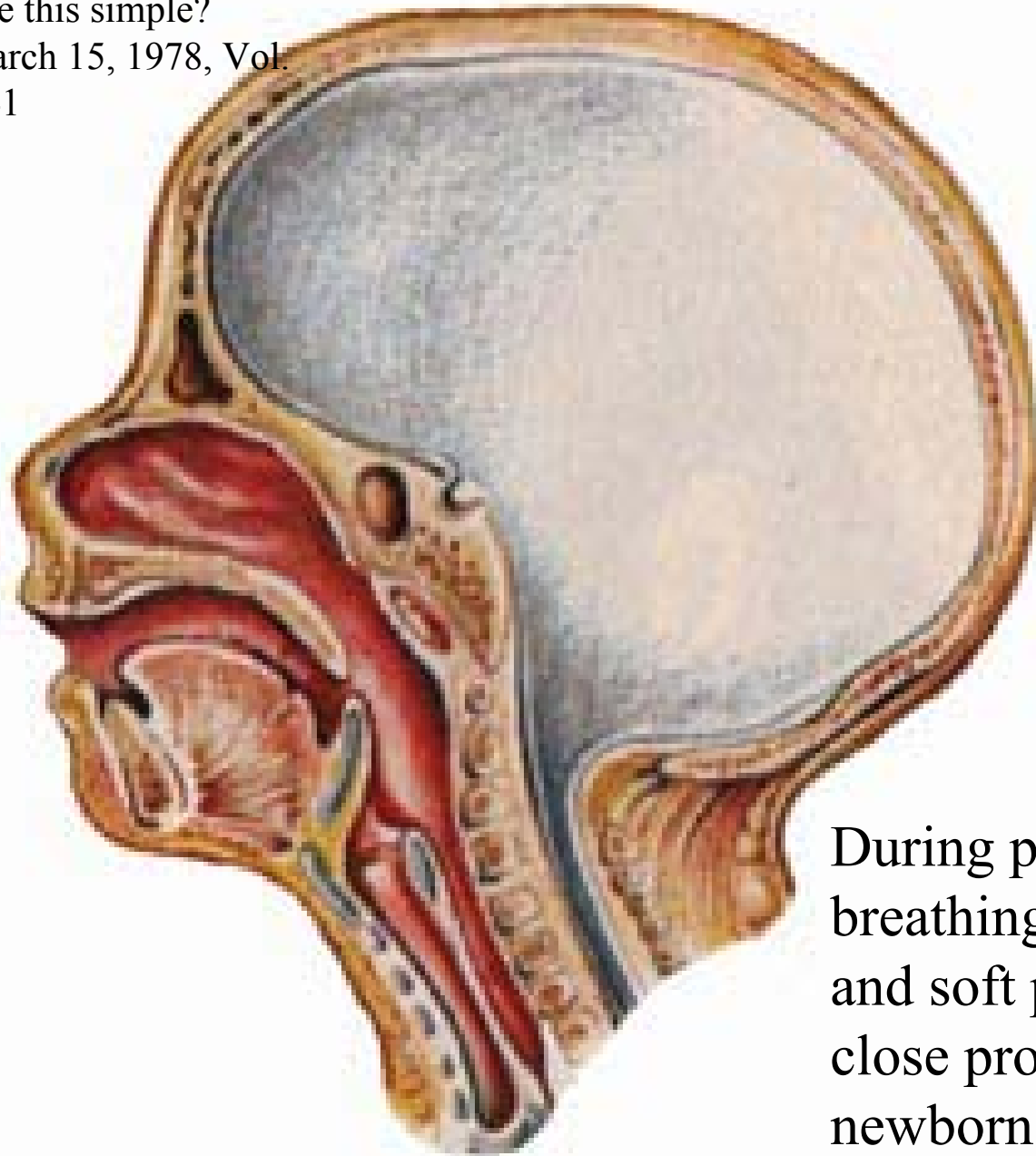
Soft palate

Epiglottis

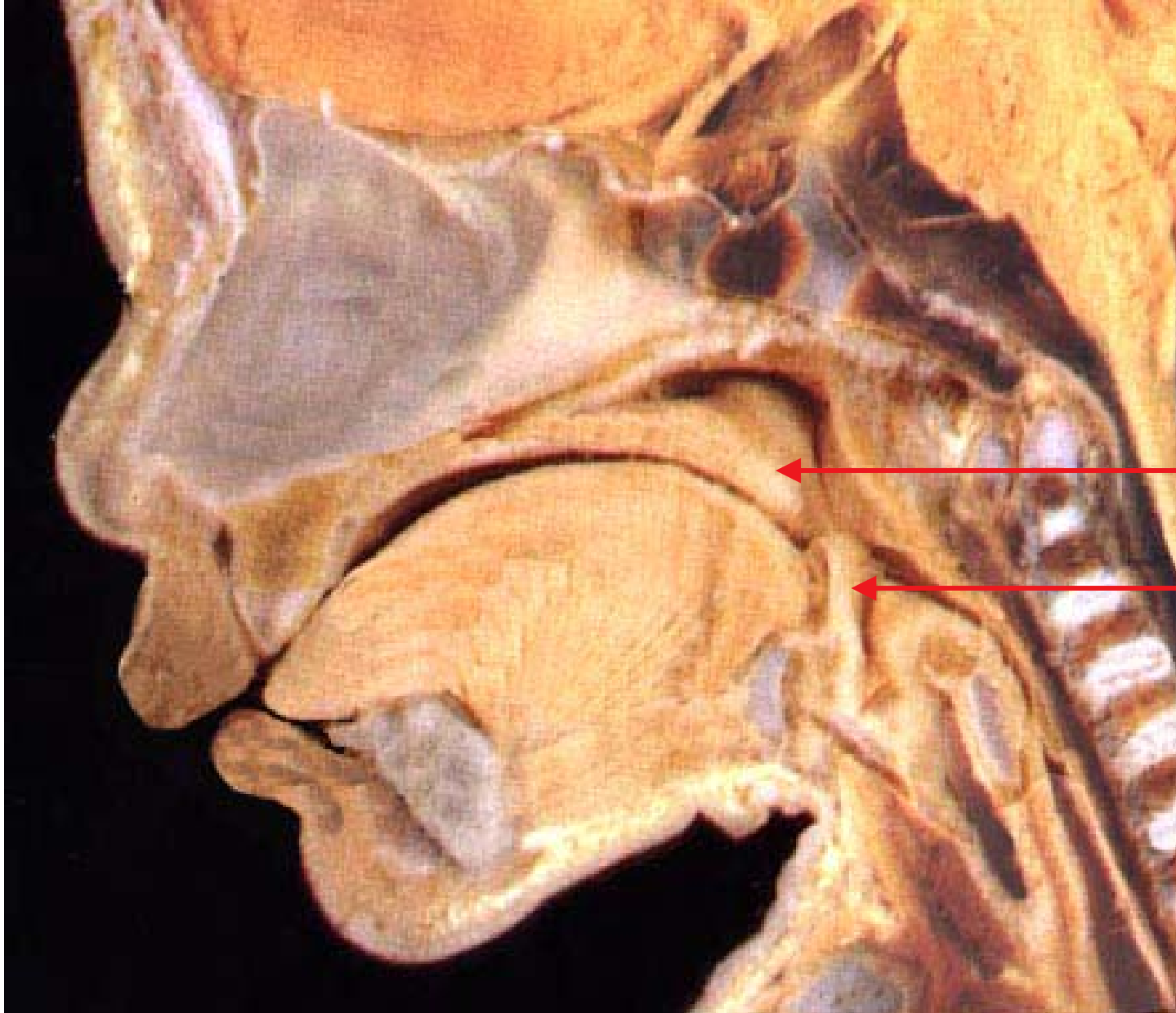
B33

The epiglottis is in direct contact with the soft palate. The tongue is located entirely within the oral cavity. (Crelin)

Crelin ES, Scherz RG, Can the
cause of SIDS be this simple?
Patient Care, March 15, 1978, Vol.
12, No 5:234-241



During passive
breathing, the epiglottis
and soft palate are in
close proximity in a
newborn.



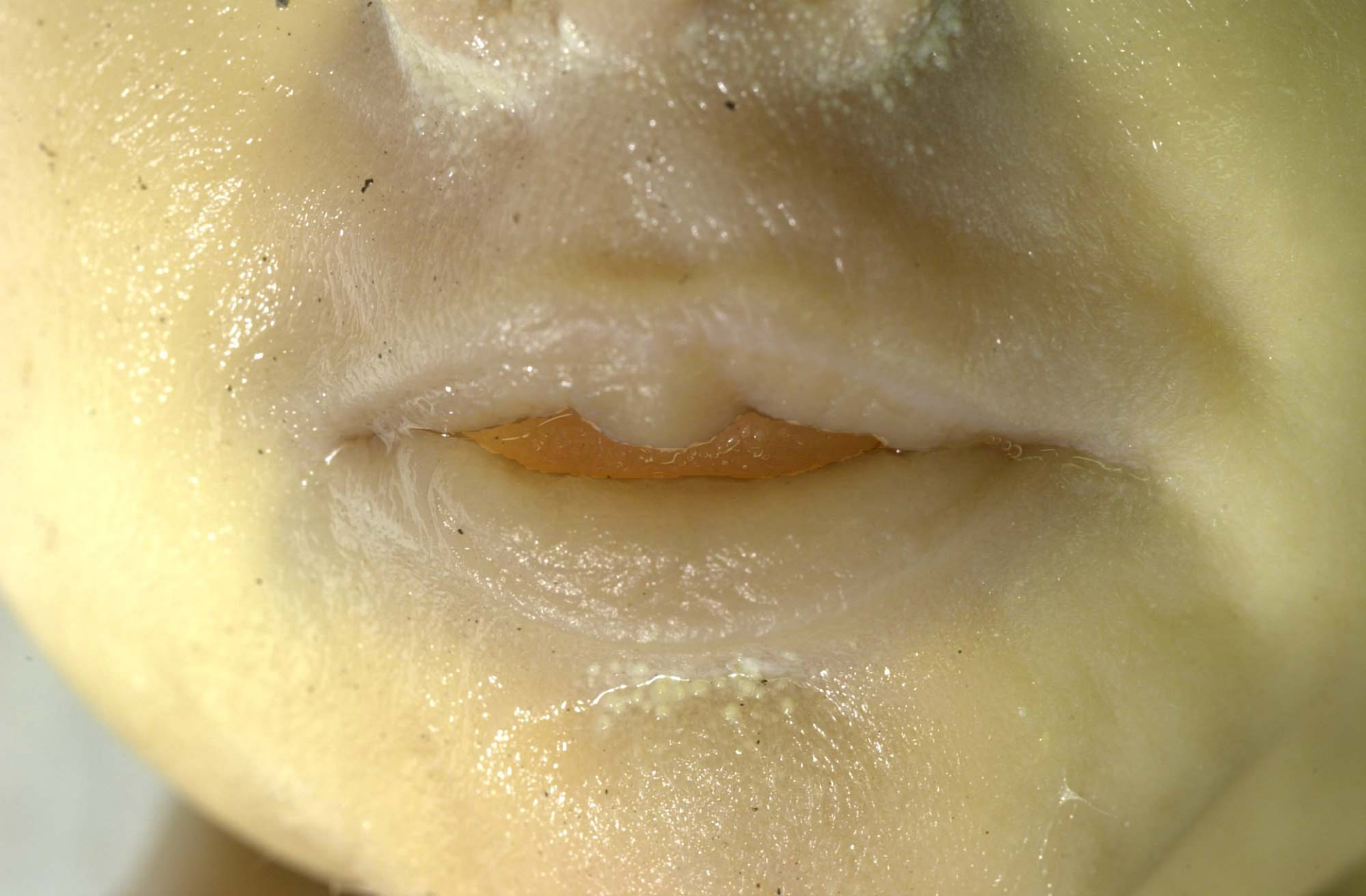
Soft palate

Epiglottis

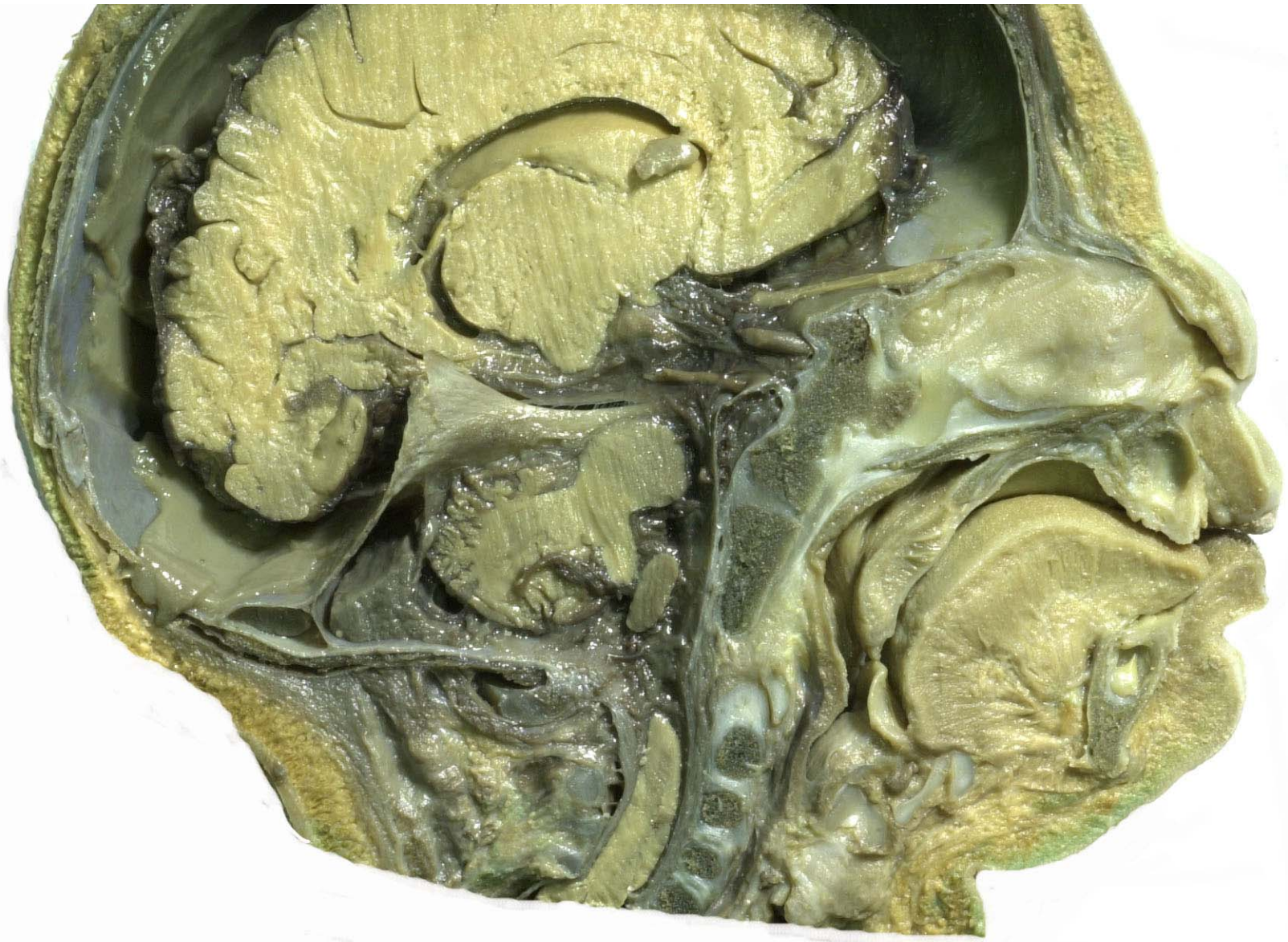
Atlas picture demonstrating similar relationship **WARNING-10**
of epiglottis and soft palate. (Rohen/Yokocki)



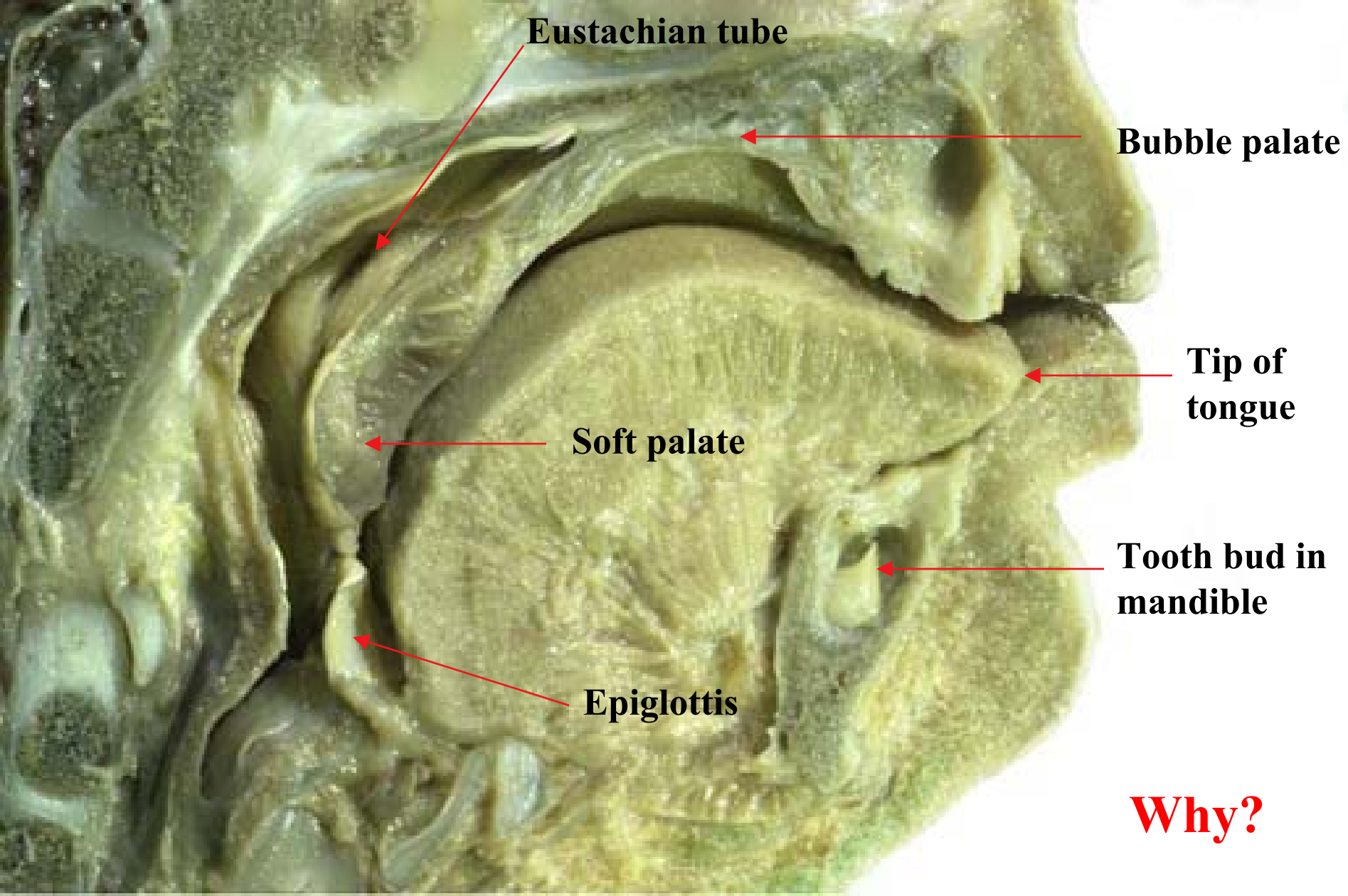
Frontal view of fetus cadaver. Note lips.



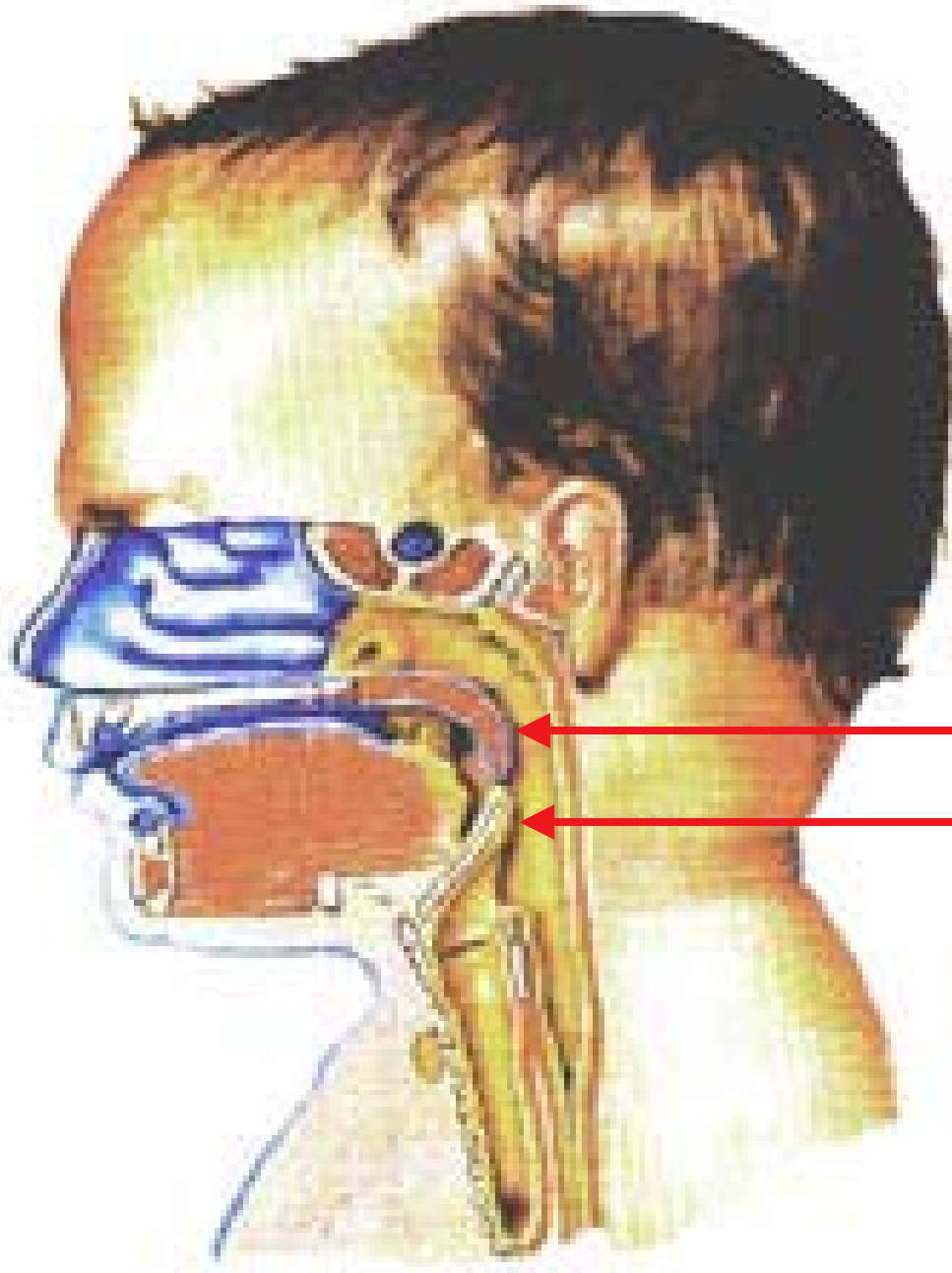
Note forward position of tongue.



Mid-sagittal dissection.



Cadaver dissection demonstrating habitual anterior tongue posture and relationship between the soft palate and epiglottis.

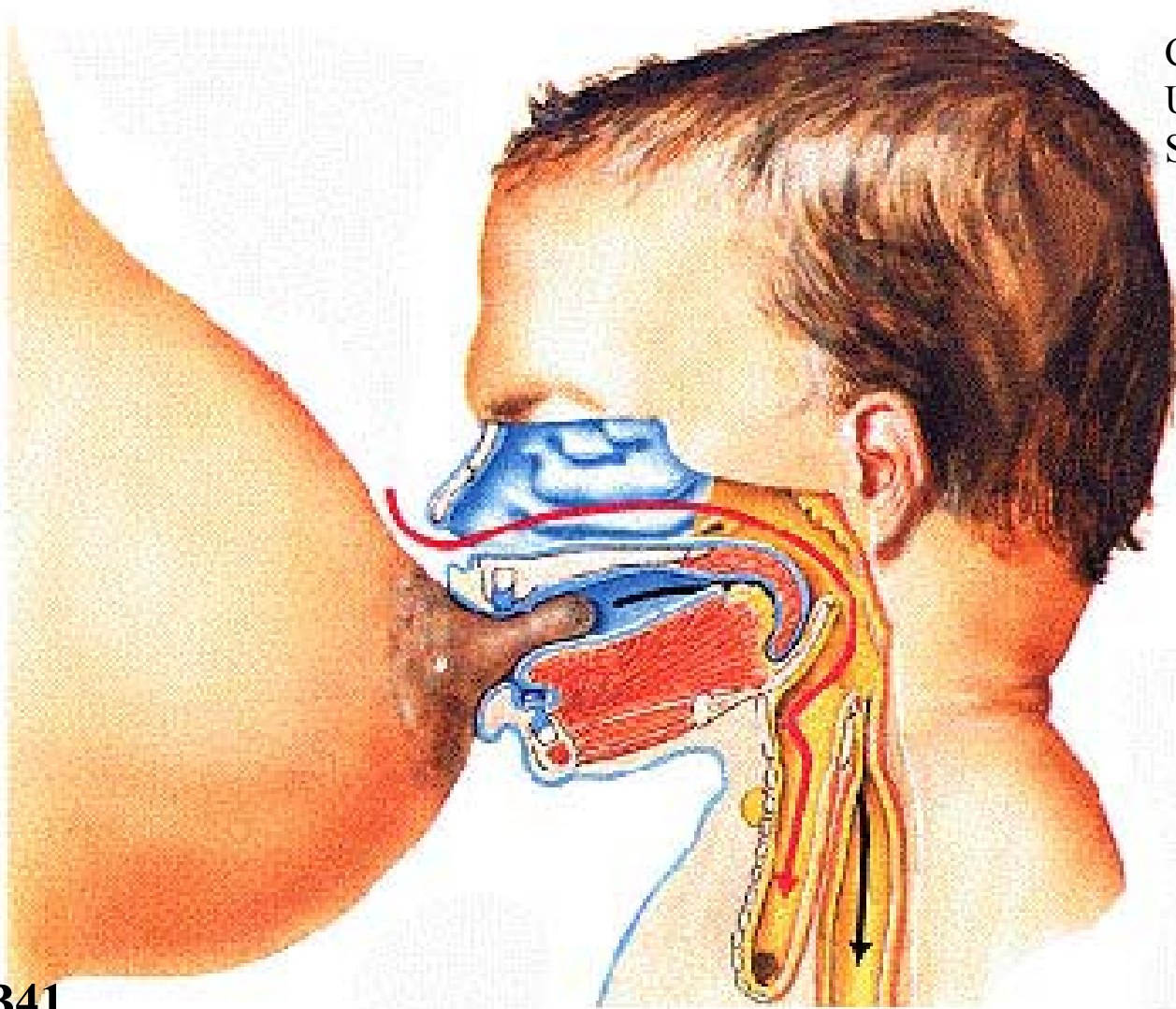


Newborn with
epiglottitis and soft
palate touching during
quiet respiration and
mouth closed.

Soft palate

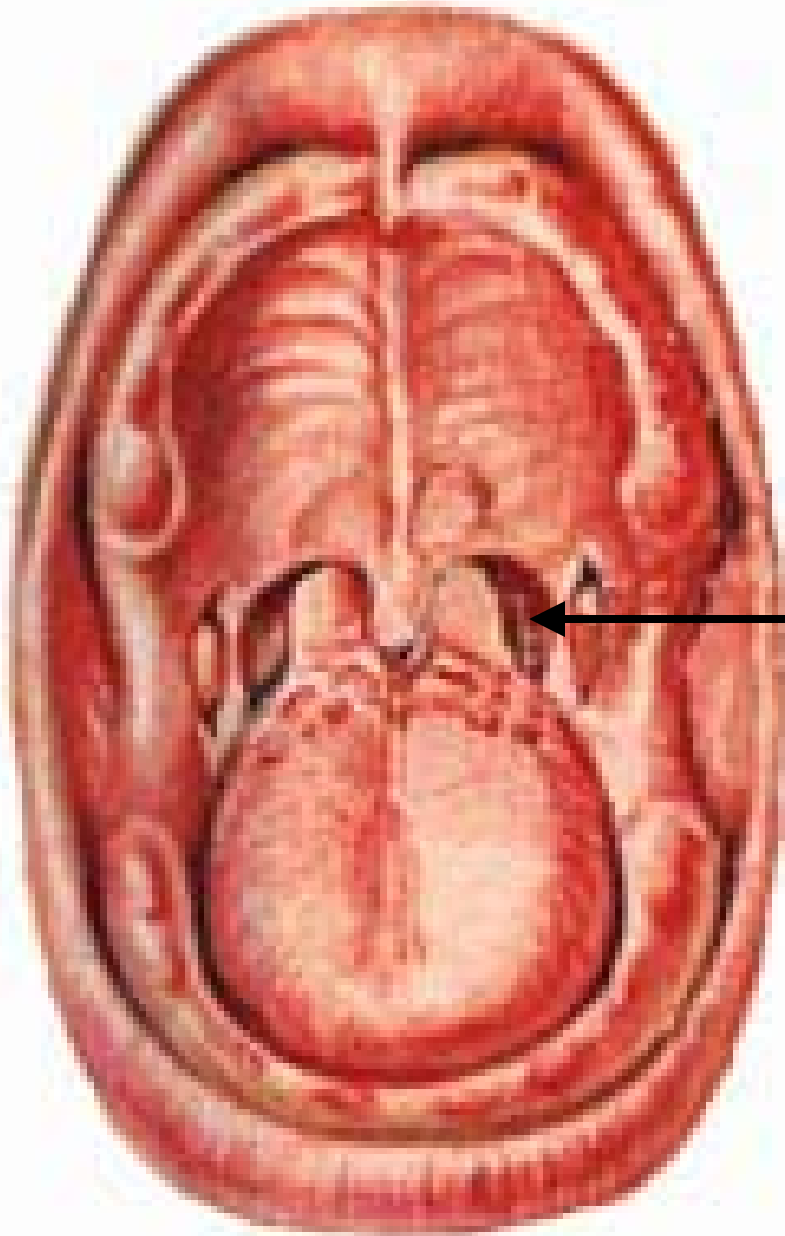
Epiglottis

Crelin ES. Development of
the Upper Respiratory
System, Clinical Symposia,
Vol. 28, No. 3, 1976



B41

During the act of breastfeeding, Dr. Crelin states the larynx can be elevated so that the epiglottis can slide up behind the soft palate to lock the larynx into the nasopharynx. This allows the infant to both swallow and breathe at the same time (Obligate).



Illustrates interlocking of soft palate with epiglottis and faucium channels through which the breastmilk flows.

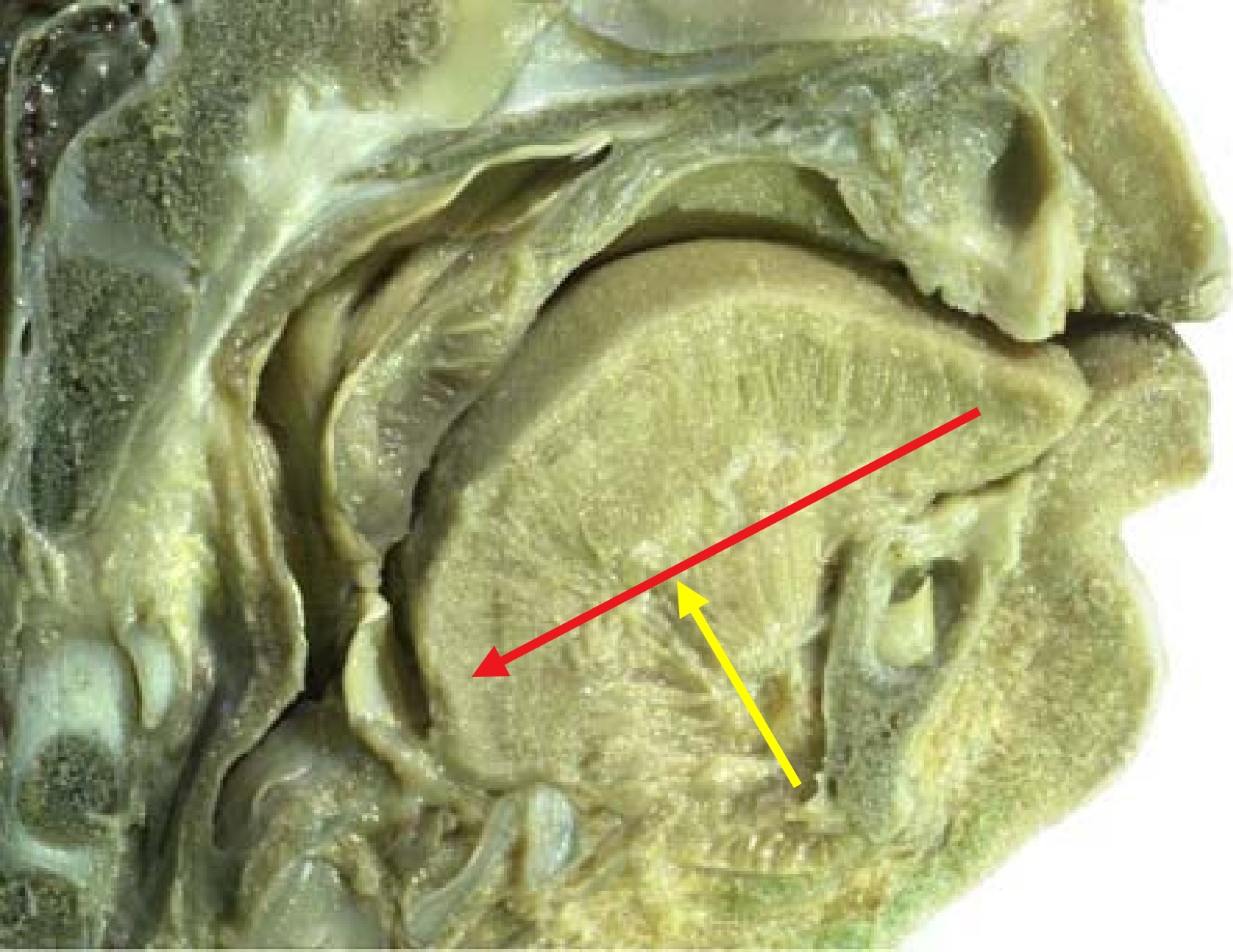
Faucium channel

Crelin ES, Scherz RG, Can the cause of SIDS be this simple? Patient Care, March 15, 1978, Vol. 12, No 5:234-241

“Maturational descent of the epiglottis, found to occur between 4 and 6 months of age, is verified by cineradiography.”

“This period, interestingly coincides with the peak incidence of SIDS, which similarly occurs at 3 to 5 months of age.”

Sasaki CT, Crelin E,S et al. Postnatal Descent of the Epiglottis in Man, March 1977, Arch Otolaryngol, Vol. 103, 169-171.



As the epiglottis descends, the tip of the tongue falls back into the mouth to an adult position.

Adult throat.



Auditory canal / Eustachian tube

Soft palate

Posterior 1/3 of tongue is now
anterior wall of oropharynx

Neck of epiglottis

**Separation of soft palate and
epiglottis is necessary in
order for humans to speak.**



B46

Throat of a very healthy 90 year old. Demonstrates one of the functions of the uvula - funneling secretions down the middle of the throat.



In order to have this:

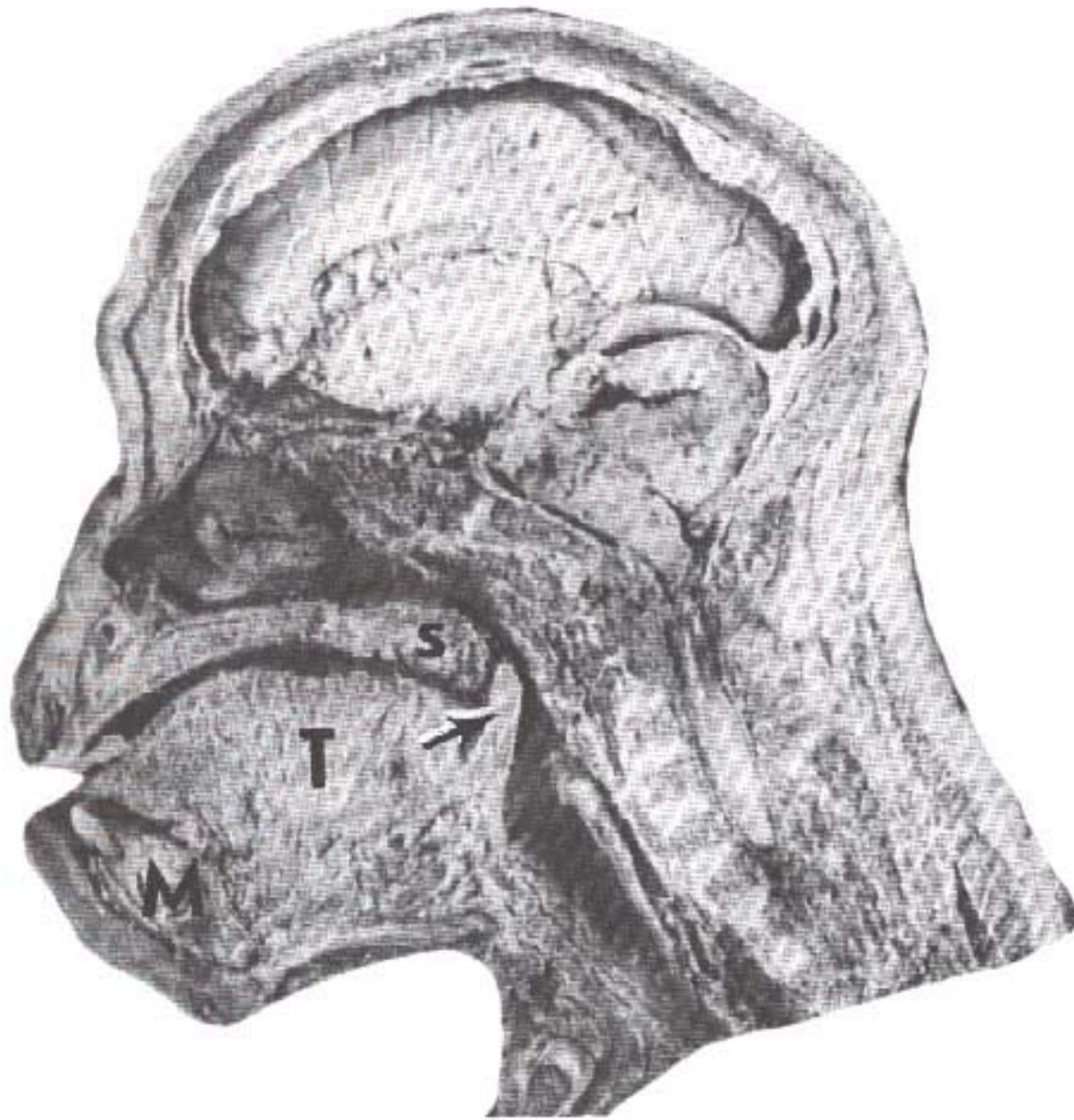


You must have this:

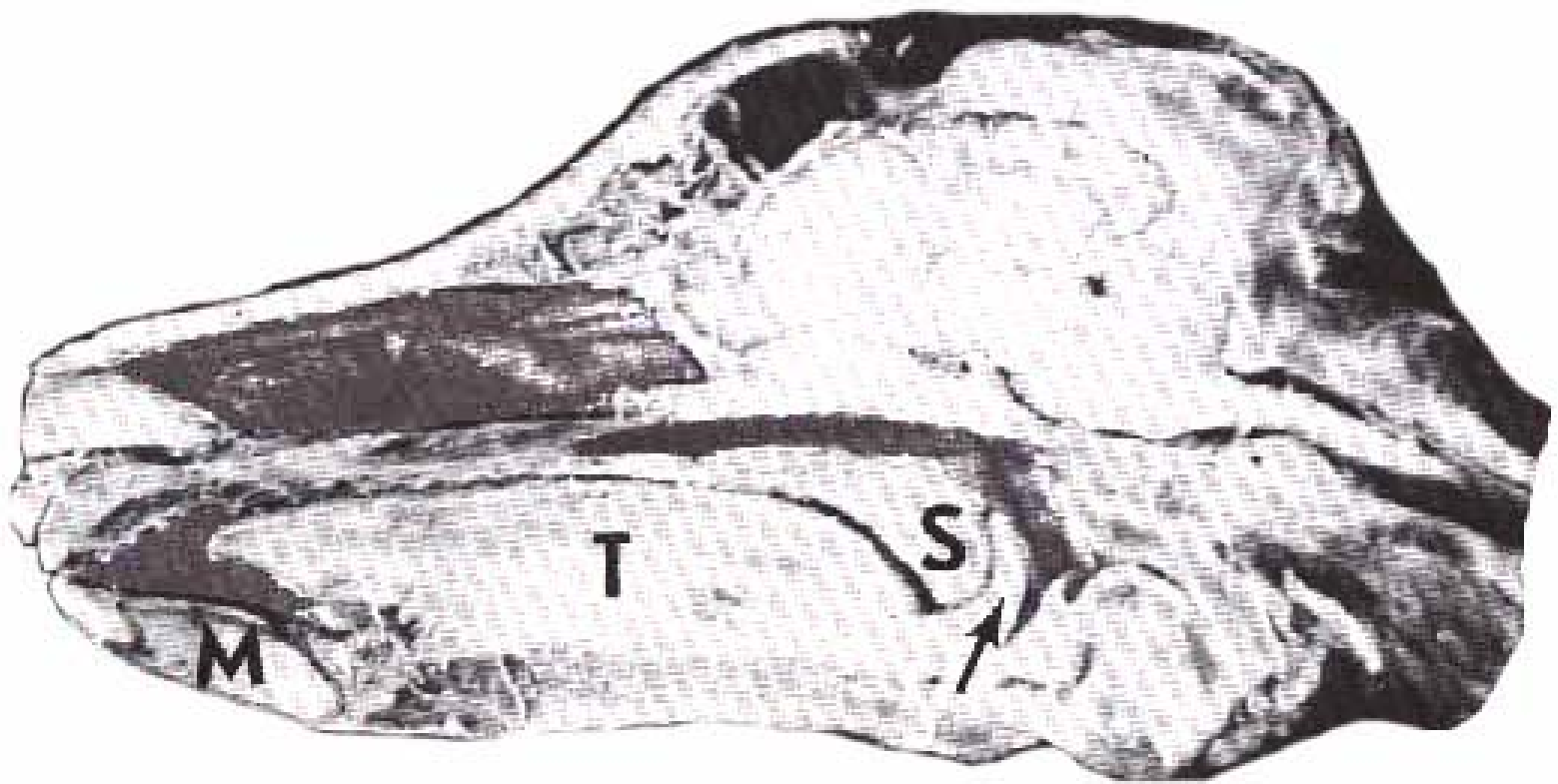


Mammals as obligate nose breathers

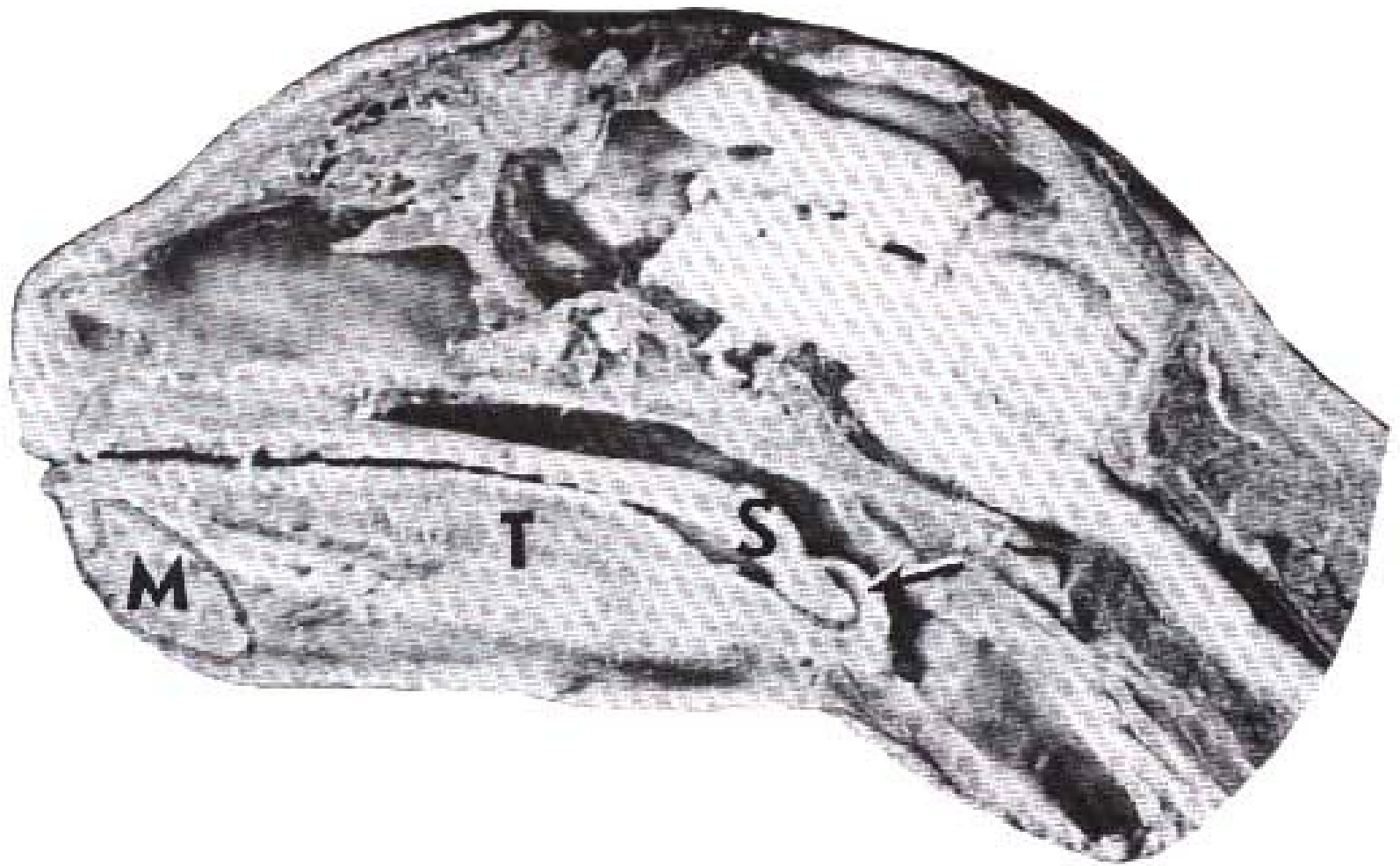
Note interlocking of soft palate and epiglottis in each illustration.



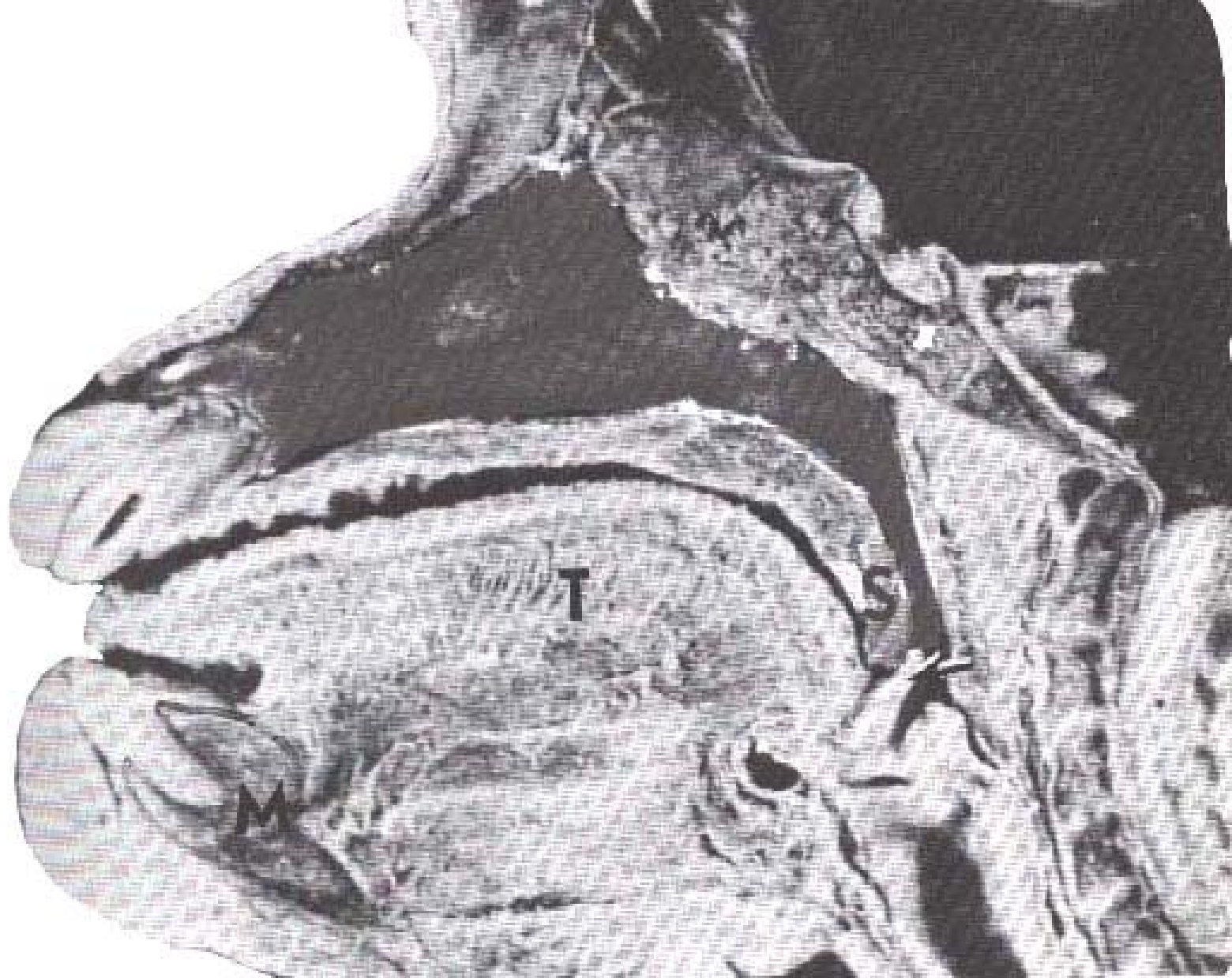
Adult chimpanzee. (Crelin)



Adult dog. (Crelin)

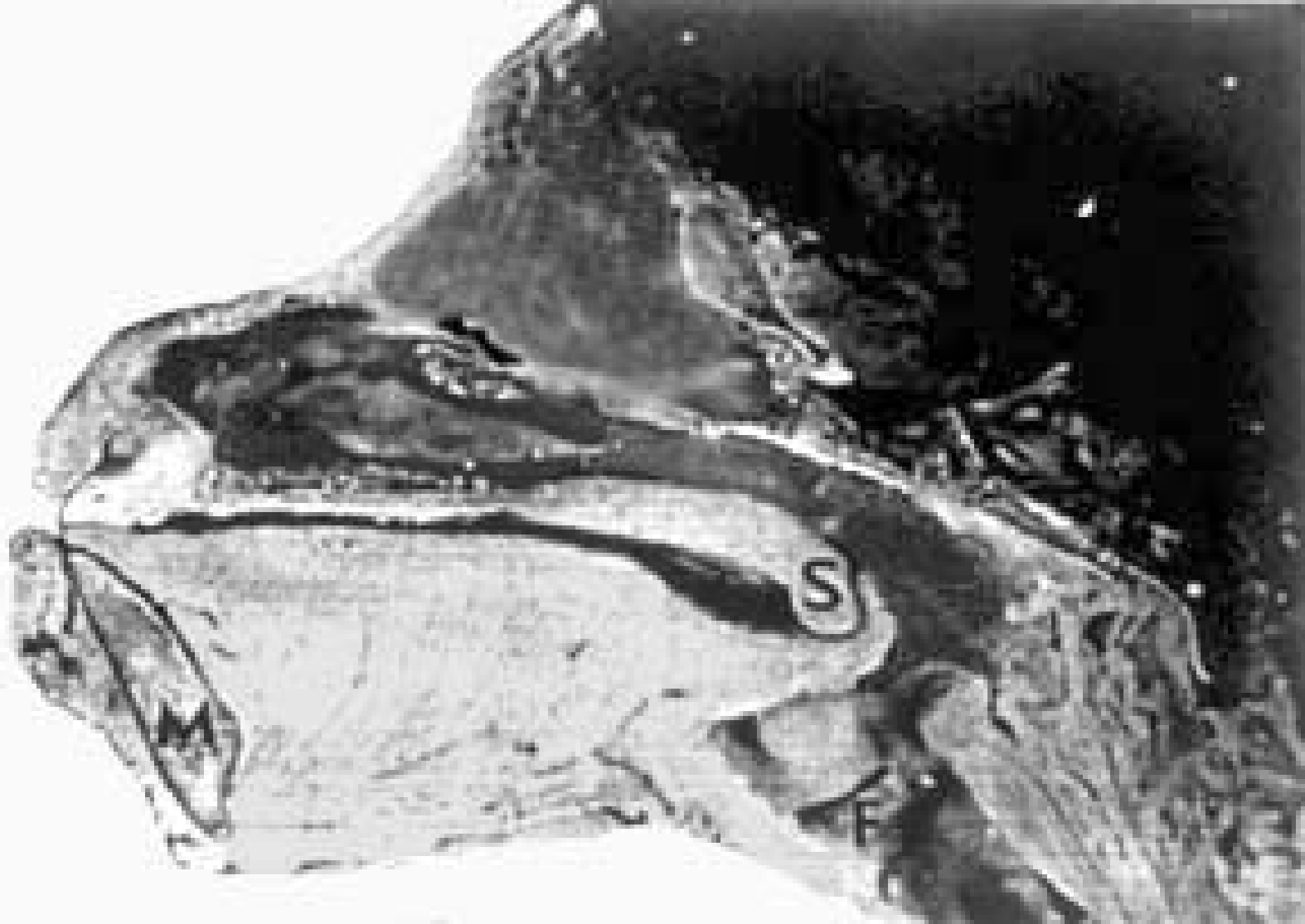


Adult cat. (Crelin)



B52

Adult stump-tail macaque. (Crelin)



B53

Adult spider monkey. (Crelin)