

mentioned, I obtained a definite history of consumption in thirty-seven cases, and of abscesses in the neck, eighteen. The evidence of a constitutional taint is therefore strong, although in eighteen cases I could get none at all.

Several cases bearing unmistakable local evidence of syphilis I excluded. In eight instances there was evidence of atrophic rhinitis in other members of the family, and three volunteered the information that their mothers suffered with the same complaint.

6. *Occupation.* The employments were so varied that I need only remark that the greater number consisted of girls belonging to the hard-working classes, and were engaged in warehouses and shops under varying degrees of unhygienic surroundings; still several belonged to the well-to-do middle class.

7. *Fætor.* With regard to fætor, whilst in fifty-eight cases it was more or less obvious to the observer, in about half that number it was appreciated by the patient. The intensity seemed to vary with the extent of the disease and the amount of crusts, but in those cases in which the accessory sinuses were involved it was always more persistent in spite of treatment. In those cases associated with bare bone I could not detect any difference in its nature. It was always worse during menstrual flow. With regard to its origin, I will ask your indulgence for a few remarks.

The mucous membrane of the nostrils is a transformed epidermal structure, derived originally from an involution of the buccal epiblast. Hence the surface epithelium (excepting the olfactory cells) and the glands originate in common with the epiderm and its appendages.

During atrophic rhinitis in the stratification of the surface epithelium we find a structural reversion to the primitive type, and in the gland epithelium we find the establishment of a perverted function--in other words, the nasal mucous membrane becomes converted into a cutaneous structure, with a corresponding change in secretion.

Cutaneous secretions vary in odor with their source and with the individual. Compare the characteristic smell of the feet with that of the axilla and the preputial glands. Even the ear is the seat of a similar fætor due to intra-tympanic

accumulation of epithelial masses and secretions (cholesteatomata).

The nasal glandular secretions are, with those of the cutaneous glands, equally liable to putrefactive decomposition; they all give rise to peculiar odors, and they are all exposed to the influence of the same micro-organisms. Bromidrosis and rhinal fætor have a close kinship, and it is in this kinship that I venture to suggest is to be found an explanation for the peculiar odor in atrophic rhinitis.

8. *Olfaction.*—Complete loss of smell occurred in only thirty cases: in the remainder the sense varied in degree with the extent of the disease and the locality invaded. Anosmia in most instances was gradual in its onset, but in not a few it was one of the first symptoms, parosmia often preceding it.

9. *Nature of the Crusts.*—Microscopical examination of the crusts afforded but little evidence of value. Staphylococci and an occasional diplococcus and leptothrix were the most prominent bacteria. One point, however, I was fully satisfied upon, viz., that the discharge was not pus, for pus cells were rarely present, the organized cells being epithelial squames and some multi-nucleated lymphocytes.

Bosworth persistently applied the term "mucopurulent to the crusts. This certainly requires justification, for the elements of pus are wanting, and there is no granulation surface for its production.

Chemically they contained mucin, keratin, a small proportion of serum, albumen and a trace of sulphur.

10. *Supra-Nasal Pain.*—From the frequency of the occurrence of pain over the bridge of the nose and at the "back of the eyes," I am inclined to consider it an important diagnostic element—especially when observed late in the disease, and when the accessory sinuses were involved. It was present in thirty-eight cases.

11. *Disappearance of the Tonsils.* As already mentioned, the faucial, pharyngeal, and lingual tonsils presented well marked atrophy, a condition which (as far as I am aware) has not been recorded. This, I think, is an important point in diagnosis, and occurring with lymph atrophy in the nostrils