



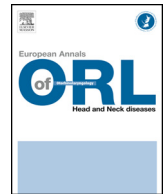
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## Editorial

# Anosmia due to dryness in about 1771: An ancestor of COVID-19?



The first reports of anosmia as one of the key symptoms of COVID-19 were published in April 2020 [1–5] (Fig. 1). The purpose of this historical review is to go back to the year 1771 with the introduction of the term “anosmia” in the French medical literature and its supposed link with fevers and inflammatory diseases. Already, at that time, anosmia was associated with a febrile inflammatory disease described as “*anosmie par aridité*” (anosmia due to dryness), both as a symptom and as a disease *per se*.

In 1771, François Boissier de Sauvages defined anosmia as follows: “The main symptom of this disease is the absence or decreased ability to smell odours. The term anosmia is formed by the Greek words *osme*, smell, and *a*, absence of. When the sulphurous saline principles that emanate from various bodies reach the nostrils during inspiration, they are moistened by the moisture of the pituitary membrane and act on the olfactory nerves that line this membrane. This condition is the immediate cause of smell. The sense of smell can therefore be lost in several ways:

- dryness of the pituitary membrane;
- excessive humidity of the pituitary membrane, as in the common cold;
- obstruction of the nostrils, for example by polyps, and in several other cases.

Sauvages describes 7 ways in which the sense of smell can be lost, including anosmia due to dryness: “We know that, in fevers and inflammatory diseases, the pituitary membrane is very often very dry, like the tongue, in the presence of high fever. It is not surprising that anosmia and loss of taste are the result of this drying. (<https://www.biusante.parisdescartes.fr/histoire/medica/resultats/index.php?do=chapitre&cote=31722x02>). Already, in 1768, Sauvages used the Latin term *anosmia*, without any accompanying text (<https://archive.org/details/nosologiamethodi02bois>). This was certainly one of the first uses of this term in medicine. Also in 1771, Jean-François Lavoisien referred to this term in his portable medical dictionary. In 1775, de Felice included this term in his encyclopaedia, with almost the same text as that of Sauvages. In 1790, Felix Vicq-d’Azyr defined anosmia as a “disease in which the sensitivity of the organ of smell is diminished or destroyed.”

This text clearly suggests a direct link between anosmia, fever and inflammation. At that time, “fever in general is nothing more than the increased velocity of the arteries; this accelerated action of the vessels produces heat, which, however, is not an essential symptom of fever, as fever is also present at the time of chills. (<https://www.biusante.parisdescartes.fr/histoire/medica/>

## La Loterie du covid19

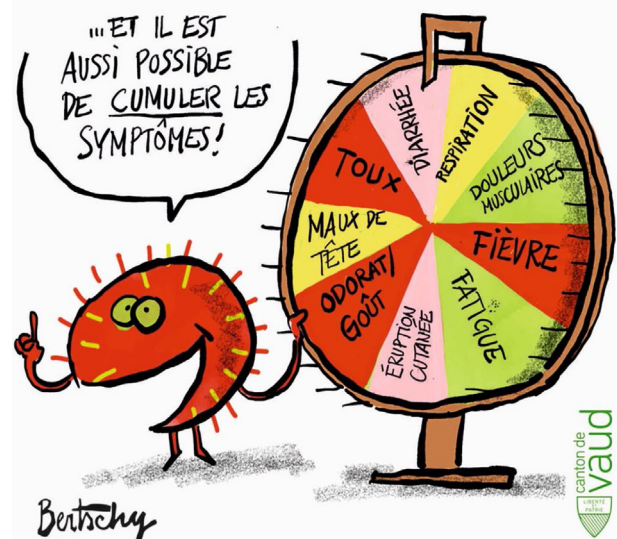


Fig. 1. Public poster campaign in the Vaud canton in Switzerland listing the symptoms of COVID-19, particularly anosmia.

[resultats/index.php?do=chapitre&cote=32546](https://www.biusante.parisdescartes.fr/histoire/medica/resultats/index.php?do=chapitre&cote=32546)). As for inflammation, it is “a generic term used to distinguish this very broad and very diverse class of disease, characterized by increased heat in a body part, associated with varying degrees of pain. To these isolated and constant symptoms, characteristic of any inflammation, either external or internal, we can add tumour and erythema of the affected part that are not really signs, which are only observed in external inflammation, and which probably do not exist in internal inflammation”.

In 1772, one of the explanations for loss of smell was confirmed to be related to drying of the pituitary membrane: “It is not uncommon to see that, in fevers and inflammatory diseases associated with a lot of heat, the pituitary membrane dries out to the point of causing loss of smell. Remember that the nasal cavity “is lined by the pituitary membrane, thus named by the ancients because of the” pituite “[phlegm] [...] from which it is derived; this membrane has a spongy consistency, with a very fine velvety surface. The spongy tissue is composed of a network of vessels, nerves and a very large number of glands. The velvety tissue is composed of

the extremities of these vessels, that is, small nervous corpuscles that constitute the organ of the sense of smell, and the extremities of the vessels, from which are derived the phlegm and mucus of the nose [...] The olfactory nerve, which is the first pair of cranial nerves, terminates in the pituitary membrane.”

A text from 1769 sheds even more light on the possible link between epidemic malignant fever and anosmia: “The duration of this malignant fever was usually fourteen to fifteen days; it sometimes ended on the 8th or even the 11th day, but more often on the 21st day and beyond... blocked nose, loss of smell and taste also occurred very often, from the 4th day of the disease, and lasted until the 14th day. This fortunate deprivation at least avoided the unpleasant nature of the many revolting remedies due to their taste and smell, but which were nevertheless necessary.”

This sensory deprivation of smell was already known since Antiquity, but its association with fever and inflammation had never been so clearly explained. Some 250 years later, COVID-19 is certainly another example of this association.

#### Disclosure of interest

The author declares that he has no competing interest.

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