

# B A S T E R I A

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## **An incrustated recent clausiliid from Belgium and some speculations about the notions "fossil" and "subfossil"**

by

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Some years before the Second World War I was privileged to carry out some investigations at Buzenol in the south-east of Belgium with regard to the formation of limestone on the "crons" and the mollusc fauna of this region. Together with Prof. Dr. P. VAN OYE I discovered the presence of the desmidiid *Oocardium stratum* Naeg., which, together with mosses and some green algae, is the cause of peculiar limestone formations, locally known as "crons". For further details concerning these formations I refer to the original publications (HUBERT, 1937; VAN OYE, 1937; VAN OYE & HUBERT, 1937).

About three years ago I revisited this area, among other things to visit the open-air museum of Montauban. Among the excavators of the hill-top were Prof. Dr. MERTENS and other Belgian scientists. I availed myself of the opportunity to see the Montauban cron. I found an increase of the vegetation, as mentioned by Prof. VAN OYE in his publication. This increase will be the death to the cron since the quantity of light under the rapidly growing trees and bushes has been reduced. If these trees should be cut down cron formation will increase.

In one of the small pools on the cron, which were entirely "paved" with this limestone, I was struck by a little spindle-shaped object

which had been completely incrustated and which on further consideration appeared to be the shell of a clausiliid. It seemed to me that the incrustation had taken place during the last few decades.

Before the war I found four clausiliid species on or near the cron These were:

*Clausilia bidentata* (Ström)

*Iphigena plicatula* (Draparnaud)

*Iphigena ventricosa* (Draparnaud)

*Cochlodina laminata* (Montagu).

The incrustated object (See photograph) is about 16 mm long and about 4.5 mm in diameter. The incrustation may have been caused by micro-organisms or by abiotic factors.

Considering its size I concluded that the calcareous layers might envelop *Cochlodina laminata* or *Iphigena ventricosa*. Dr. F. E. LOOSJES identified it as *Cochlodina laminata*. Meanwhile the incrustated mollusc has been added to the collection of the Natural History Museum, Leyden.

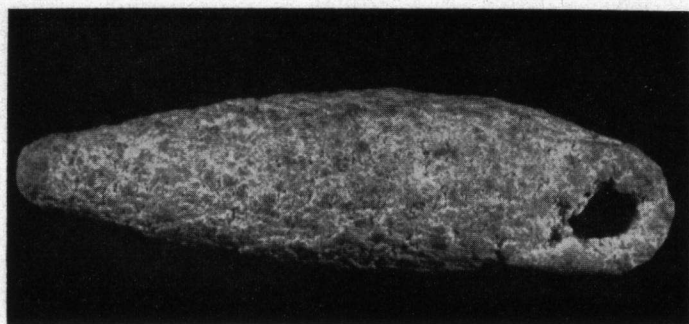


Fig. 1. Incrustated specimen of *Cochlodina laminata* (Mont.), found on the cron of Montauban near Buzenol in SE Belgium (Magn.  $\times 8$ ., Phot. ten Broeke).

This find (is it a subfossil?) set me thinking about the notions "fossil" and "subfossil", a subject that had intrigued me before.

In his famous book KARL VON ZITTEL says about fossils:

"Unter Versteinerungen (Fossilien, Petrefacten) versteht man diejenigen Ueberreste oder Spuren von Pflanzen und Thieren welche vor Beginn der jetzigen geologischen Periode gelebt haben und in den Erdschichten erhalten blieben".

This definition gives rise to several problems. Thus the lines of demarcation between the present geological period and the preceding

one is not the same with every scientist. Therefore any new idea about this demarcation may turn a fossil into a non-fossil.

Another difficulty is that we find fossils, or at least remains that are so called by everybody, which lie not in but on a geological stratum and which may never have been covered by any stratum. A case in point is that of mammoth bones fished out of the North Sea on Dogger Bank.

Drs. G. KORTENBOUT VAN DER SLUIJS kindly drew my attention to the definition of „fossil” to be found in "Geological Nomenclature" edited by A. A. G. SCHIEFERDECKER (1959).

"2574. Fossil – any organic remains, impression or trace of an animal or plant of past geological ages, which has been preserved in the rocks of the earth's crust. In scientific usage the term is not restricted to remains of a stony nature."

Drs. KORTENBOUT VAN DER SLUIJS remarks that he thinks this definition rather vague. In a recent letter Dr. VAN REGTEREN ALTENA informed me that he, too, has come across several definitions, none of them satisfactory. I myself arrived at the same conclusion.

The definition of a subfossil in "Geological Nomenclature" is equally vague:

"2576. Subfossil – organic remains only slightly changed and resembling recent forms."

Dr. VAN REGTEREN ALTENA gives the following definition (translated from Dutch):

"A subfossil is the remains of a plant or animal from recent times, which make the impression of being a fossil because of its state of preservation."

This definition does not seem to get me much further either, as it refers to the term "fossil" which is another vague notion.

When cleaning an aquarium some time ago, I found the shells of some recent molluscs which had turned bluish under the influence of sulfate-reducing bacteria their surfaces being more or less corroded as well. By their state of conservation these objects had the appearance of fossils. I should, however, not dream of calling them subfossils.

Many people may think these speculations purely academic, rejecting them as practically useless. Yet I consider them extremely useful, since incomplete definition may be a serious check in the development of a special field of science. It is my opinion that „leaky” definitions are not permissible unless it has appeared from extensive studies that the situation as it is cannot possibly be improved. I am not convinced, however, that the subject has been seriously studied.

The careless use of badly defined terms has caused expressions as "living fossils". Referring to the Lama of South America a British

scientific paper recently published an article actually headed: "Fossil Camel Faces Extinction".

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