On the occurrence of Clausilia dubia (Gastropoda, Pulmonata) in north-western France

by

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In 1957 I discovered a flourishing colony of the clausiliid land snail *Clausilia dubia* Draparnaud (identification checked by Dr. F.E. Loosjes, Wageningen) on the seaward face of the coastal cliffs near Cap Gris Nez (Département Pas de Calais) in north-western France. As this locality is far outside the known range of the species, further observations were carried out during short visits in 1960, 1964 and 1966, of which the results are summarized below.

Cap Gris Nez, which marks the traditional boundary between the North Sea and the Straits of Dover, is a 50 m high promontory of a Portlandian sandstone, locally known as 'Grès de la Crêche', in the region called 'le Boulonnais'. Geologically this region is the eastern-most part of the Weald-anticline, to which the British shores of the Straits of Dover also belong.

I have not found *Clausilia dubia* on Cap Gris Nez itself, but the species is common on the geologically similar 'sloping cliffs' immediately to the North, between 'le Gris Nez' and 'le Châtelet' (cf. Carte Michelin 51, Boulogne-Lille, 1:200 000), over a distance of about 1500 m. These 'cliffs' are 20 to 30 m high, sometimes steep, sometimes sloping more gently; most of the countryside behind the cliffs is cultivated. North of 'le Châtelet' the coast consists of sand dunes, a habitat which is not suitable for *Clausilia dubia*.

The colony is thus restricted to the seaward slope of the 'cliffs'. Apart from the steepest parts, these are largely covered with grass, with scattered sandstone boulders of varying size. On the less steep 'shoulders' a more luxuriant vegetation of *Epilobium*, *Rubus* and *Urtica* has developed, with even a few *Salix* thickets. *Clausilia dubia* is confined to the sandstone boulders and patches of bare rock, where it can be very common, usually accompanied by smaller numbers of *Discus rotundatus* (Müller). In the vegetation away from boulders, *C. dubia* is virtually absent.

It is worth noting that *Clausilia dubia* is apparently able to tolerate a fair amount of sea spray at localities such as this. The snails were quite common on boulders in the supralittoral zone, and were sometimes found in close association with such typically supralittoral forms as the isopod *Ligia oceanica* (Linnaeus) and the amphipod *Orchestia gammarellus* (Pallas).

DISCUSSION

Cap Gris Nez is quite outside the known area of distribution of *Clausilia dubia*. Germain (1930: 358) summarized its distribution in France and stated categorically: "Cette espèce ne vit pas dans l'Ouest, ou elle a cependant été indiquée dans les départements de Maine-et-Loire, de la Sarthe et de l'Orne, sans doute par confusion avec certaines formes du *C. nigricans* Pult." The nearest populations to the East are the tree-living *C. dubia* of the banks of the rivers Meuse and Rhine in north-eastern France, Belgium and the Netherlands (Loosjes, 1951; Jaeckel, 1962). In Britain the species is represented by the subspecies *C. dubia suttoni* Westerlund (= *C. cravenensis* Taylor), which has its main distribution in the central and northern parts of the country (Dean, 1928; Blackburn, 1941). The geographic origin of this subspecies had been discussed by Poliński (1928: 263), who came to the conclusion that "it arose from the obsolete form, which reached England through the intermediation of the Rhine, at a time when the North Sea formed merely a gulf of the North Atlantic and the Rhine had its mouth at the latitude of Yorkshire West of the Dogger bank." Most authors have considered *Clausilia dubia suttoni* to be an endemic British subspecies, but Jaeckel (1962: 152) apparently considered also part of the Dutch populations to be *suttoni*.

An isolated colony of *Clausilia dubia dubia* has long been known to exist on the Castle of Dover in south-eastern England (Cooke, 1882; Kennard, 1941); this area belongs to the same geological formation as Cap Gris Nez, from where it is clearly visible on fine days. British malacologists apparently agree that this colony is not of natural origin, but the result of introduction by man (Huggins, 1919; Kennard, 1941). Kennard (l.c.: 263) suggested "an introduction with building material from Normandy"; this seems unlikely to be true, as *C. dubia* has never been found in that part of France.

If, on the other hand, the newly discovered population of *Clausilia dubia* at Cap Gris Nez is not unique and the species also occurs

elsewhere in north-western France, the possibility that the Dover colony, too, has a natural origin cannot be completely excluded.

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