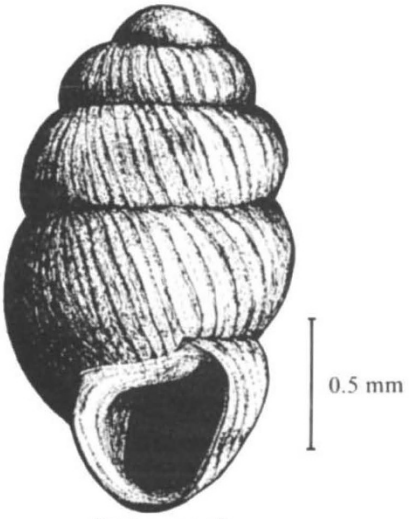
A glacial relict mollusc

from B. Coles and B. Colville*

THE mollusc *Vertigo genesii* (Gredler), thought to be extinct in Britain, has been found living in the Upper Teesdale National Reserve. *V. genesii* has a scattered distribution in Boreal and Arctic Europe where it lives in base-rich flushes of montane character[3,4] and is common in British deposits of late-glacial age (12,500 — 10,000 BP)[5,6].

The Upper Teesdale National Nature Reserve, UK, is well known for its exceptional flora, including a relict arctic-alpine element.[1] A similar faunal element has not been recognised although the Reserve contains invertebrates of rare occurrence in Britain.[2] The specimens were found, alive, in tufts of *Carex demissa* Hornem. (agg.) in the open parts of base-rich flushes on Widdybank Fell (450 m) in May 1979; their presence was confirmed in July of the same year. Mollusca associated with *V. genesii* were:— *Lymnaea truncatula* L., *Succinea pfeifferi* (Rossmässler) and *Nesovitrea hammonis* (Ström). Plants present were:— *Armeria maritima* Willd., *Plantago maritima* L., *Juncus triglumis L.*, *Kobresia simpliciuscula* (Wahlen.), *Carex demissa* Hornem. (agg.), *C. panicea* L. and *Equisetum variegatum* Web. & Mohr. *Minuartia stricta* Hiern (which is probably the most notable plant of the Teesdale flushes, Teesdale being its only station outside the arctic circle) was not found at this site but the flush is otherwise typical of areas in Upper Teesdale where an arctic-alpine flora occurs. The occurrence of *V. genesii* in Upper Teesdale and its association with the relict arctic-alpine flora agrees well with the European distribution of the species. It is noteworthy that the associated Mollusca in Upper Teesdale were also common associates of *V. genesii* in the late-glacial. □



Vertigo genesii

1. For a summary of the natural history of Upper Teesdale see:— Clapham, A.R. Ed., Upper Teesdale, Collins, London (1978).
2. See Coulson, J.N. in chapter 8 of ref. 1.
3. Ehrmann, P. Die Tierwelt Mitteleuropas II, Weichtiere, Molusca, Quelle & Meyer, Leipzing (1933).
4. Zilch, A. and Jaeckel, S.G.H. Ergänzung Tierwelt Mitteleuropas Weichtiere, Mollusca, Quelle & Meyer, Leipzig (1962).
5. Kerney, M.P. Late-glacial deposits on the chalk of South-East England, Phil. Trans. Ser. B **246**, 203-254 (1963).
6. Kerney M.P. Brown, E.H. and Chandler, T.J. The Late-glacial and Post-glacial history of the chalk escarpment near Brook, Kent, Phil. Trans. Ser. B **248**, 135-204 (1964).

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Sign, symbol and syntax in the language of apes

from Brendan O. McGonigle

TERRACE'S[1] recent criticism of evidence suggesting that apes can master "the conversational, semantic, or syntactic organization of language" has intensified a controversy spanning a century of speculation by primatologists. In the 19th century, several determined attempts were made to teach apes to talk but they were largely unsuccessful, only a few words being mastered by some animals. Later, Yerkes[2] identified part of the problem as the medium of communication. Apes would not mimic what they heard; instead their powers of imitation were heavily dependent on vision. Impressed by their intelligence, especially as a result of Köhler's now classic studies of insightful behaviour by chimpanzees[3], Yerkes suggested that apes "might be taught to use their fingers, somewhat as does the deaf and dumb person, and thus helped to acquire a simple, non-vocal 'sign language' ".

More than 40 years later this suggestion was put to the test[4] when a young chimpanzee, Washoe, was trained by the Gardners on a form of manual-visual communication claimed to be a version of American sign language (ASL). By the third year of the project, Washoe had acquired a stable repertoire of some 85 signs of which a number were used in two sign combinations in a manner compatible with that reported for children[5]. In addition, Washoe invented a number of signs of her own. A striking case was *bib* whose ASL equivalent was not known to her trainers when it was first introduced (appropriately) by the chimp. In later tests the Gardners monitored Washoe's capacity to answer 'wh' questions (who, what, where, whose) the production of which constitutes the first evidence that children have grammatical competence[5]. With various simplification procedures for analysing their data (now contentious) the Gardners found that the question frames exerted a very high control over the replies as indexed by the grammatical appropriateness of the answers. In carrying out the tests the Gardners relied on productive (making the chimp formulate a reply in terms not given in the question) rather than comprehension tests which "effectively eliminates the problem of clever Hans cueing".

Despite its apparent scientific rigour, the work has had its critics. In a recent attack, Seidenberg and Petitto[6] claim that Washoe's signing does not resemble signing in ASL in any important way. Instead, they allege that a large proportion of ape signs can be interpreted without any special knowledge of apes or ASL and form part of a repertoire of unlearnt gestures. These authors also challenge the Gardners' method of simplifying or reducing the replies of Washoe to 'wh' questions before reporting them. Amongst those deleted were signs which were repetitious of those in a question and signs which were repeated during a reply. The effect is to trim a response such as *you me you out me* to *you me* thus giving the utterance a more humanlike form — a possibly serious distortion in their view. By contrast, children in the early stages of language acquisition "typically produce utterances which are reduced relative to the corresponding adult forms, leading to the characterization of their speech as telegraphic".

Terrace and his associates have also found evidence for redundancy in the signing of their chimpanzee Nim, trained like Washoe in what is in fact Pidgin Sign English (PSE). Some utterances contained as many as 16 signs issued in "a striking, redundant, recursive string". In analysing the relationship between 2, 3, and 4 sign combinations, moreover, Terrace has found a major difference between Nim and children. When making longer utterances the child deletes repeated elements and expands on the information given in the shorter utterance. By contrast Nim's additions to the two sign utterances tended to be redundant, for example, "play me", "play me Nim" or repetitious, for example, "eat Nim eat". Terrace suggests that the purpose of three sign combinations by Nim is to add emphasis rather than convey new information.

The really significant findings in the report by Terrace *et al.* which

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