REPORT ON THE NON-MARINE MOLLUSCA

Report on the Non-Marine Mollusca from Aveline's Hole, Burrington Combe.

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We are indebted to the Spelæological Society of the University of Bristol, and to Dr. L. S. Palmer for the opportunity of examining the molluscan remains found during the exploration of this cavern. Though numerous caves in these islands have been ransacked for the remains of the larger mammalia, there are but few records of the accompanying mollusca. The last few years have, however, seen a welcome change ; cave work has been carried out on true scientific lines, and this series of shells furnishes ample proof of the extreme care with which the exploration was carried out. Practically only four caves in England have furnished evidence as to the mollusca, Dog Holes, Warton, Lancashire, explored by J. W. Jackson, F.G.S., Langwith Cave, Derbyshire, investigated by the Rev. E. H. Mullins, M.A., Ightham Fissures, Kent, examined by W. J. Lewis Abbott, F.G.S., and by one of us (A.S.K.) and the fissure deposits at Chudleigh, Devonshire, also examined by one of us (A.S.K.), and to this small list we can now add Aveline's Hole. Cavern deposits are, alas, too often not "sealed," man and the burrowing animals being the culprits; hence great care has to be used in dealing with the mollusca, for many living species have a great range in time, but in Aveline's Hole there has been but little, if any, admixture. The material sent us was in four series, one from the first foot of cavern material, one from the second, one from the third, but by far the larger number came from the "mammal rift." The numbers after the species indicate the levels in which they occurred, whilst R stands for rift. Vitrea crystallina (Müll) 1, 3, R. Common. All the examples are

the var. contracta West.

- *Polita cellaria* (Müll) 1, 2, 3, R. The commonest species, though not so common in layer 1. The specimens are large, as is usual with cave examples.
- Polita alliaria (Mill), 2, R. Common in the rift. This species, though rare in Pleistocene fluviatile deposits, has occurred in all the cavern series we have examined, and is usually common.

Polita nitidula (Müll), R. Common, but small.

Polita pura (Ald), 2, R. Common in the rift, but only one specimen from the floor deposit.

Polita radiatula (Ald), R. Common.

Zonitoides nitidus (Müll), R. One example, a damp-loving species. Euconulus 'ulvus (Müll), R. One example.

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- Arion sp., R. A number of granules the remains of the internal shell were obtained by washing the earth. Generic determination alone is possible.
- Pyramidula rupestris (Drap), R. Four examples. Extremely rare in a fossil state.
- Goniodiscus rotundatus (Müll), 2, 3, R. Common in the Rift material only.

Helicella virgata (Da Cost), R. One example.

Helicella itala (Linn), R. Two examples.

Helicella caperata (Mont), R. Common.

Hygromia hispida (Linn), 1, R. Common.

Hygromia striolata (Pfr.) 1, R. Three examples. Extremely rare as a fossil in the Pleistocene.

Acanthinula aculeata (Müll), R. One example.

Helicigona lapicida (Linn), 1, 2, R. Five examples of this wellknown rock-loving species.

Arianta arbustorum (Linn), R. Fragments; a damp-loving species. Helix aspersa (Linn), R. Fragments. Hitherto unknown as a Pleistocene fossil, except in Devonshire.

Helix nemoralis, (Linn), 1, 2, 3, R. Common, but rather small. Helix hortensis (Müll), 1, R. Several fragments, and one perfect example.

Ena obscura (Müll), R. Two immature examples.

Cochlicopa lubrica (Müll), R. Common.

Cacilioides acicula (Müll), R. One example of this subterranean carnivorous species.

Pupilla muscorum (Linn), R. Two examples.

- Lauria cylindracea (Da Cost), R. Common. Extremely rare as a Pleistocene fossil.
- Abida secale (Drap), 1, 2, R. Common. As a Pleistocene fossil hitherto only known from Cuxton, Kent, and Buckland, near Dover.

Columella edentula (Drap), R. One example.

Clausilia laminata (Mont), 1, 2, R. Seven examples.

Clausilia rugosa (Drap), 2, R. Common.

Pomatias elegans (Müll), 1, 2, R. Common.

All these species live in the neighbourhood at the present day. There is a great similarity between this series and those from Ightham, Dog Holes, Chudleigh and Langwith, and it is therefore not unreasonable to conclude that they all belong to the same stage, *i.e.*, late Pleistocene. With regard to the climate, the shells would appear to indicate slightly damper conditions than those now existing.