

through a paste, resembling a compact basalt. This may be sometimes seen in Derbyshire, but is not common.

The fourth species, which is of very common occurrence, is amygdaloidal trap, or toadstone: this is formed by a vesicular paste, apparently consisting of a fine-grained basalt of a looser and more earthy texture, the cavities being filled with drusy geodes of calcareous spar or green earth, and more rarely zeolite, chalcedony, &c. All these varieties of trap usually are associated with, and pass into, each other.

(b) *Mineral contents.* These are, 1. Crystals of hornblende; these are common. 2. Crystals of augite: these are more rare, but are not uncommon in the basalt of Teesdale, and have been found in the toadstone of Derbyshire. 3. Olivine, found at Teesdale. 4. Green earth, common in the Derbyshire toadstone. 5. Calcareous spar, in the toadstone, passim. 6. Quartz, in Derbyshire toadstone, and in Northumberland. 7. Chalcedony and onyx, *ibidem*. 8. Jasper, *ibidem*. 9. Prehnite, in the basalt of Staffordshire. 10. *Mesotype. ibidem, and in Derbyshire.* 11. Adularia, in Northumberland.

It must be remarked however, that the zeolitic minerals are of much rarer occurrence in the English trap rocks, than in those of most other countries.

Where the traps alternate, as in Derbyshire, with others containing metalliferous veins, they usually intercept those veins; so that with the exception of the oxidulous iron, and a few crystals of iron pyrites, (which are rare) no minerals of this class are found in them.

(c) *Organic remains.* No organic remains, either mineral, or vegetable, have yet been found in any rock of this class in England. Mr. Weaver, however, mentions that he has discovered shells of the *Terebratula* in the greenstone associated with the carboniferous limestone of the centre of Ireland, and exactly corresponding in all its relations, with the trap rocks we are now describing. With every deference to the authority of this writer, which justly deserves to be placed in the highest class, it must still be observed, that a fact hitherto of single occurrence, must necessarily be received with some caution; and that some possible source of error may be still suspected, either as to the nature of the supposed remains, or the rock containing them: the latter especially (when the great changes of character often assumed by other rocks in approaching the trap, is considered) appearing open to ambiguity. Be the fact however as it may, it cannot be considered as pregnant with any very important theoretical inferences, since shells have been found preserved in recent, and decided lavas, at the points where they have flowed into the ocean. And those who