"Sarsens"

I SUPPOSE it is in the order of things that utility should be a prime consideration, but still one cannot but regret the wholesale destruction which is overtaking the picturesque stones which have given its name to the "Valley of Grey Wethers," near Marlborough.

This destruction has been going on for some years, as is witnessed by the cottages in the neighbourhood built of "sarsen," but has of late been vastly increased by the demand for this strong stone for the bridges on the railway now making between Swindon and Marlborough. Nearly all the large blocks have indeed already disappeared.

So far no attack has been made on the fine cromlech of the "Devil's Den," which lies at the foot of the valley. It has had a narrow escape before, for a weather-beaten shepherd told me some years back that he "minded" how when he was a boy the farmer there got all the horses and oxen and tackle he could in the parish and laid on to the capstone, and "they drew 'un and drew 'un, but it warn't to be moved."

The geological interest in these rugged stones is considerable. They are found, more or less, all over the chalk range, but always as scattered or isolated blocks. The temple at Avebury was constructed of monoliths of this stone, so is most part of Stonehenge. The cromlechs of "Kit's Cotty" and "Wayland Smith's Cave" are formed of it, and its curious mode of weathering is well shown by the "blowing stone" under Uffington Camp. There is hardly a village amongst the chalk hills in which a mass of this rugged stone may not be seen, but nowhere is it found in anything like the abundance which has characterised the "Valley of Grey Wethers."

It is, I believe, the generally-accepted view that these "sarsens" are the indurated remains of a tertiary stratum of sand with which the chalk was once overlaid. Perhaps some of your readers can inform me where these stones can be seen in their native sand. The circumstance of the fracture of some of the "grey wethers" near Marlborough disclosing imbedded in them what look to me like chalk flints possibly points to an earlier origin for them.

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May 19

AN ENTOMOSTRACON LIVING IN TREE-TOPS

IT is not to be wondered at that the moist and shady hiding-places between the leaves of the Bromeliads, filled as they are by food of various descriptions, should be occupied by all sorts of animals, and that some of these should have chosen them as their favourite abodes and should have exclusively deposited their eggs in them. And indeed, according to Fritz Müller's friend, Friedenreich, almost all the coleoptera peculiar to the Bromeliads have been for the last thirty years found by him exclusively in such places, and the same is probably true of the larvæ of very many species of insects, and for the tadpoles of the tree-frogs, which undergo their metamorphoses therein.

But for all this it is, as Fritz Müller, writing from Itajahy, November, 1879, says, a very astonishing thing that there should be found living among the aquatic animals in the tops of the woods a little crustacean whose relations one is accustomed to find among the sea-weeds. It is about one millimetre long, and is of the family of the Cytheridæ.

Of the two cosmopolitan genera, each rich in species, Cypris and Cythere, into which the untiring investigator of the salt and fresh waters of Denmark, Otto Friedrich Müller, divided the bivalved crustacea, those of the first (Cypris) live almost entirely in fresh, and those of the second (Cythere) almost entirely in salt, water. Only a very few isolated exceptions to this rule have as yet come to light, and in the Brazils Fritz Müller only knows Cythere as having marine species, while those of Cypris are from fresh water; and never would he have expected to meet with, on the trees of his wood at Itajahy, an old Baltic acquaintance which he erewhile had collected when wading bare-footed with Max Schultze in Greiswalder Bay. At the first glance he did not recognise the Cythere

of the Bromeliads as a relation of its recent marine cousins, because it differed a good deal in the shape of its bivalved shell from all known species of Cythere, and even from all known Entomostraca. These generally possess laterally-compressed valves, which are broader than they are long, and are commonly bean-shaped. In the Bromeliad-lodger the length of the valves is a good deal more than the breadth, and, in addition, the ventral surface is flattened, and has a longitudinal furrow, reminding one of a coffee-bean. In consequence of this, when this new form is out of the water, instead of falling on its side as the others would do, it falls upon its back, or upon its ventral surface. This is probably an adaptation to its place of abode. In the sea the species of Cythere climb up on the narrow filaments of the algæ; and in the Bromeliads they must move about on the flat surfaces of adjacent leaves.

While no recent entomostracoon was known to Fritz Müller which this new form resembles, he was at once reminded of a species (*Elpe pinguis*) which occurs as one of the oldest fossil Cytheridæ, and which Barrande described from the Silurian strata of Bohemia. This the Bromeliad form very closely resembles, but it is just five times as small. Fritz Müller describes this new form as *Elpidium bromeliarum*, for though it possesses no very marked peculiarities in its feet, still it does not fit into even any of the genera into which the old genus Cythere has been of late subdivided.

Elpidium bromeliarum, Fr. Müller. 1, dorsal aspect; 2, ventral aspect; 3, side view, right valve removed; 4, anterior antenna; 5, 6, posterior antenna of male and of female; 7, mandible; 8, maxilla; 9, 10, 11, feet, of 1st, 2nd, and 3rd pairs; 12, last body segments; 13 and 14, egg and young, from the parent valves; 15, *Elpe pinguis*, Barr. Magnified 1 to 3 = 10 : 1; 4 to 12 = 71 : 1; and 13 and 14 = 36 : 1.

Everywhere that Fritz Müller has looked for this new form, from the sea-side to some hundred kilometres into the interior, he has found it common in the tree-frequenting Bromeliads of the primeval woods. As it cannot, like some other of the animals inhabiting such places, wander from tree to tree, or even from one plant of Bromelia to another, its distribution must be affected by beetles (Agabus, Laccophilus, Hister, &c.), or some other of the Bromelia investing forms. The young Elpidia, when they leave their mother, are only 0.2 mill. long, and doubtless they cling to some of the flying insects, and so are transported. As, however, the colonisation of the Bromeliads is thus seemingly entirely left to chance, it