

found resting on the drift in a manner that shows that they were laid there long after the deposition and even subaërial erosion of the glacial deposits.

In one cave on the borders of the Lake Mountains it was, and is still, hoped we may find out something more definite about the relation of the palæolithic to the glacial period.

In the absence of direct evidence, such as the overlap of boulder-clay over the mouth of the cave or the cave deposits, Prof. Dawkins remarks: "The probable date of the introduction of the contents into ossiferous caves in glaciated areas may be ascertained by an examination of the river deposits. If the animals found in the caves inhabited the surrounding country after the melting of the ice, their remains will occur in the post-glacial gravels. If they are not found, it may be inferred that they had retreated from the district before the latter were deposited" (p. 410); and, as Mr. Tiddeman has pointed out, there could be no pre-glacial remains in the gravels where there had been glacial erosion, as that must have swept out all the incoherent river deposits. By this test, Prof. Dawkins goes on to say, "the Pleistocene strata in the Victoria Cave, near Settle, may be considered pre-glacial, as well as the hyæna den at Kirkdale" (p. 411).

It was once thought that we were getting the direct evidence we sought for. At the entrance of the Victoria Cave, says Prof. Dawkins, "ice-scratched Silurian grit-stones are imbedded in the clay, which abuts directly on the cave loam, and passes insensibly into the clay, with angular blocks of limestone, within the cave. They may possibly be the constituents of a lateral moraine *in situ*, as Mr. Tiddeman suggests, or they may merely be derived from the waste of boulder-clay which has dropped from a higher level,"—that is, from the broken ground seen in the accompanying sketch on the left of the Victoria Cave. "The latter view seems to me to be most likely to be true, because some of the boulders have been deprived of the clay in which they were imbedded, and are piled on each other with empty space between them, the clay being carried down to a lower level and re-deposited" (p. 121).

Though we cannot yet make out clearly the relation of man to the glacial period, or explain the gap between palæolithic and neolithic deposits, this we do know—that man lived in this country and throughout Western Europe with the lion and hairy elephant, the hyæna, and woolly rhinoceros. He was probably more or less nomadic, following the urus and the elk, and shifting from place to place as they migrated with the seasons. That in his weapons of warfare and the chase he resembled the dwellers on the shores of Arctic seas, and from the associated animals probably lived when continental conditions and higher mountains produced much greater extremes of climate than are found in the same countries now. In many places he probably followed hard on the receding glaciers, before the advance of which, perhaps, his ancestors retreated. That although we cannot assign a date to his first or last appearance, we must refer him to a period so remote that wide valleys have been scooped out and whole races of animals have been exterminated since his time, but how long it took to bring this about we cannot yet tell.

Prof. Dawkins having qualified himself for the study by

acquiring an intimate knowledge of the osteology of the animals apt to be found in such places, has been long engaged in collecting the evidence which caves furnish as to the early inhabitants of Europe, and has given us the result of his researches in a very readable volume, which, we doubt not, will reach another edition, and reappear with the correction of many small inaccuracies and inconsistencies, such as would be likely to occur in putting together the evidence collected through a series of years, during which Prof. Dawkins' own views were undergoing some change as new evidence was forthcoming, and the researches and views of other observers were being brought before him.

OUR BOOK SHELF

The Descent of Man, and Selection in relation to Sex.
By Charles Darwin, M.A., F.R.S. Second Edition,
revised and augmented. Pp. 688. (Murray: 1874.)

SINCE the first edition of this great work was reviewed in these pages (*NATURE*, vol. iii., pp. 442, 463), it has been repeatedly reprinted without any important change. But the new issue differs, not only in form, but also in many important additions, from the first. In spite of the added material, the whole work is now comprised in a single volume scarcely larger than one of the previous two. For this purpose the print has been much compressed, and the paper is thinner. The leaves have also been cut. So that although in some respects more convenient, the present form is less pleasing than the original one. We would suggest the desirableness of publishing a library edition of this and Mr. Darwin's other works, uniform with "Animals and Plants under Domestication," so that the *opera omnia* of our great biologist may stand ranged in a well-ordered row, printed in legible type with ample margin on opaque paper, fit to be clad in the sober dignity of russia. The present volume looks more like a school cram-book than a treatise which makes a generation illustrious. A prospectus has just reached us from Stuttgart of a German translation of the works of Mr. Darwin, by Victor Carus, to be published in numbers, with photographic and woodcut illustrations, portrait, indices, &c., and to be completed in ten handsome volumes. It would surely not be creditable were there to be no corresponding edition in English.

A list of the principal additions and corrections made in this edition of the "Descent of Man" is prefixed, and shows at a glance that the most important additions have been on the subject of Sexual Selection.

The whole treatise is now divided into three parts: The Descent of Man; Sexual Selection generally; and Sexual Selection in relation to Man. The two somewhat disjointed sections of the original work are thus combined into more of an organic unity. Beside innumerable references to the vast literature bearing on the subject scattered through the periodicals and books of travel of the civilised world, there is an important contribution by Prof. Huxley, on the resemblances and differences between the brain of man and that of apes, which occupies seven closely-printed pages. This and other valuable additions make this edition necessary to biologists as a work of reference, though most will probably prefer the earlier one for reading. P. S.

Manuals of Elementary Science. Zoology. By Alfred Newton, F.R.S. (Society for Promoting Christian Knowledge, 1875.)

A BIRD'S-EYE view of a science from the hand of one who, during many years, has devoted most of his thinking time to the investigation of its principles and details, is certain to have a vigour and freshness about it which must be as