

famous discoveries in the Cavern of Kirkdale, on the northern side of the Vale of Pickering. As already observed, these are the reliquiae of animals which lived in the vicinity.

The list of Kirkdale animals, as first given by Buckland in the 'Reliquiae Diluvianæ,' is still very nearly a sufficient catalogue of the earliest known birds and mammalia of Yorkshire.

CARNIVORA . . . . .	Hyæna, Lion, Tiger, Bear, Wolf, Fox, Weasel.
PACHYDERMATA . . .	Elephant, Rhinoceros, Hippopotamus, Horse.
RUMINANTIA . . . .	Ox, Deer (three species).
RODENTIA . . . . .	Hare, Rabbit, Water-rat, Mouse.
BIRDS . . . . .	Raven, Pigeon, Lark, Duck, Partridge.

Considerable as this catalogue is, and containing examples of carnivorous and herbivorous, of dry land and fluviatile races, denizens of air and water, it can only be regarded as an index to the animal life of the period.

I cannot produce *evidence* that the vegetation which this fauna requires existed in Yorkshire; but the subterranean forests on the Norfolk coast, which consist of fir-trees, are undoubtedly of this æra, for they are *rooted on* the mammaliferous crag and *covered by* the boulder clay.

In a marl deposit at Bielbecks, which may be of the pre-glacial period, but which has also been regarded as of later or post-glacial date\*, we have several of the same quadrupeds, as *Elephas primigenius*, *Rhinoceros tichorhinus*, *Urus antiquus*, large Deer, large Horse, *Felis spelæa*, and Wolf. A Duck was the only bird; a *Chrysomela* the only insect; an umbellate plant was recognized by its seeds. Three terrestrial shells were found, viz. *Helix nemoralis*, *H. caperata*, and *Pupa marginata*; one swamp shell, viz. *Succinea amphibia*; and nine freshwater shells, viz. *Limnæa limosa*, *L. palustris*, *Planorbis complanatus*, *P. vortex*, *P. contortus*, *P. nitidus*, *P. spirorbis*, *Valvata cristata*, and (the only bivalve) *Pisidium amnicum*.

When we compare with the Kirkdale *pre-glacial* quadrupeds the species (which have left remains) in peat, marsh, buried

\* Trimmer, in Geological Proceedings, 1851.