in these simple foot marks, the existence, and some of the habits, of an interesting class of animals is proved, at a period so remote, that the entire population of the globe has since been changed, at least once or twice, and probably several times more. For, to say nothing of minor divisions of the strata, the animals and plants of the secondary rocks must have all been extinct, before the creation of those in the tertiary deposits, and most of these last must have ceased to exist before the production of the present races. The number of years that have since elapsed, we cannot even conjecture; for, in respect to all the races of animals and plants that have occupied the globe, previous to the existing tribes, the scriptures are silent, giving us to understand merely, that a period of indefinite duration intervened, between "the beginning" and the creation of man; and geological monuments, although they clearly point out successive epochs in the natural history of the globe, yet furnish us with few chronological dates.

It may prove, also, an instructive lesson to the geologist, that the mere foot marks of these early animals should have remained so distinct, although every relic of their skeletons has disappeared.* If birds lived during the deposition of new red sandstone, they doubtless existed during the formation of each successive group of rocks to the highest. Yet, with perhaps one or two very doubtful examples, no trace of them is found in all the wide interval between the red sandstone and the tertiary beds around Paris.† Surely, the geologist will be led to enquire, whether he has not been too hasty in inferring the non-existence of the more perfect animals and plants, in the earlier times of our globe; and whether, after all, it may not be that they did exist, even along with the earliest animals and plants, which we now find imbedded in the strata. The recent discovery of phenogamian vegetables in Scotland, below the coal formation, gives additional force to this suggestion.‡

In pursuing my investigations on this subject, I confess that I was greatly surprised to discover so readily, so many distinct species of the Ornithichnites, or rather distinct genera of birds, for such I can hardly doubt they are. All the present Grallæ in Massachusetts do

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* Their bones may yet be found.—*Ed.*

† Dr. Mantell has recently described them in the Wealden, below the chalk—above the oolite. See our micellanies.—*Ed.*

‡ Observations on Fossil Vegetables; by Henry Witham, Esq. Edinburgh, 1831.