

siders him to be an *advanced* genetheonom of some extinct ape, even should the remains of species be found hereafter more human-like and more manipulative than the gorilla or chimpanzee.

I am disposed to regard, then, *progressive change* as one of the great primary modifying principles of organic nature; and "natural selection" as a secondary one,—the latter subordinately operating in the production of *proximately allied* specific and varietal forms.

Some years ago I contributed a few facts, which showed that variations of physical conditions, as depth of water and nature of sea-bottom, induced in certain British shells modifications of form equal to differences prevailing between many species of mollusca;* in a paper published a year or two previously, I particularly noticed the remarkable, and, in many cases, imperceptible gradations of generic characters running through the tetrabranchiate Cephalopods;† and in my "Monograph," I have pointed out the various forms assumed by *Camarophoria Schlotheimi*, and some other Permian fossils. These may be taken as evidences that I have not been inattentive to the vexed question of species. Of course, it would ill become any one to dogmatize on such a subject, and disbelieve in the future turning-up of facts subversive of his preconceived notions; nevertheless, I feel myself bound to declare, that all my observations and reasoning incline me to believe in the two modes of creation as herein advanced.

CORRESPONDENCE.

Professor King's Stratigraphical Tables.

SIR,—The Table of British Rocks, by Professor King, given in the last number of the 'Geologist' (pp. 193-7), I cannot let pass without saying, that however perfect it may be as regards those Irish rocks amongst which the Professor teaches, it is not as useful as might be to a student in the South-east of England.

Its many imperfections will be seen on comparing it with the table given in Lyell's 'Elements,' with those of a more detailed kind scattered through the lately-published edition of Jukes's 'Manual,' or with the Index of Colours of the Geological Survey. The following are amongst the most striking mistakes (in the Lower Tertiary and the Secondary rocks):—

1. The *Upper* and *Lower Bagshot Beds* are not noticed, only the Middle Bagshot (Barton and Bracklesham) being given. The *Woolwich* and *Reading Beds* are also left out, although the Thanet Sand (of less importance) is given.
2. The *Lower Greensand*, save its lowest bed (the somewhat local Atherfield Clay), has escaped notice.
3. The *Kimmeridge Clay*, the *Coral Rag* (with its associated beds

* See Annals and Magazine of Natural History, vols. xviii. and xix.

† See *ibid.*, vol. xiv.

of *Calcareous Grit*, the *Cornbrash* and *Forest Marble*, and the *Fullers' Earth*, and *Inferior Oolite* are all left out.

I could point out many other mistakes; but I think that the above are enough to show that Professor King's Table needs to be a little more "revised and corrected" before it can be said to be "up to the present time." I would however remark that the good notion of giving separate columns for marine and freshwater types is in great measure marred by the formations in one column being printed on the same line with those in the other, as if they were exactly of the same age; whereas such is not always the case. Thus, the Eocene Series (in which, by the way, the main divisions of *Upper*, *Middle*, and *Lower* are not given) should stand as follows,—classing the *Hempstead Beds* with it, and not with the Miocene:—

	Marine Types.	Fresh- and Brackish-water Types.
Upper Eocene .	{ Parts of the Fluvio-marine series of } { the Isle of Wight }	Hempstead Beds } Bembridge Beds } Fluvio-marine Osborne Beds } series of the Headon Beds } Isle of Wight.
Middle Eocene		
	Upper Bagshot Sand } Middle { Barton Clay } Bagshot Bagshot { Bracklesham Beds } Beds. Lower Bagshot Sand }	
Lower Eocene .	London Clay. Woolwich and Reading Beds (part of) . Thanet Sand.	{ Shell-beds of Woolwich, etc., { Pebble-beds of Bronley, etc.

In this form the table shows, at a glance, that there are no purely marine formations of Upper Eocene age in Britain; but that there are beds of that age that are mainly of freshwater origin, etc.

I am, yours truly,
W. W.

The Trinidad Pitch Lakes.

SIR,—I observe in a paper "On the Torbane Mineral Field," by Mr. Taylor, in the February number of the 'Geologist,' a statement to the effect that the Pitch Lake of Trinidad stands in close proximity to a volcano. As this statement has been repeated in various works, and has apparently led to some false generalizations, it may perhaps be well to make the true state of the case a little better known.

No volcanic substances or erupted rocks have been found to exist near the Pitch Lake; and not only is there no volcano in Trinidad, but, so far as I am aware, no traces have been discovered either of ancient or of recent volcanos in the island. What may perhaps have given rise to the statement above alluded to, is the existence of several so-called *mud volcanos*, or salses, which eject only mud and water, and do not possess a temperature above that of the air, and certainly do not appear to have any connection with what is usually understood by volcanic action. The neighbouring parts of South America are equally free from evidences of volcanic disturbance.

What I have stated may suffice to call attention to the subject; and for details, including an excellent and lucid account of the bituminous deposits in Trinidad and their probable origin, I would beg to refer those desirous of knowing more on the subject to the "Report on the Geology of Tri-