

If the thickness of the continental crust is the theoretical one then the sum of the areas of the continents can be found when we know the amount of acidic crust, i.e. the amount of magmatic differentiation, that has occurred. Spread the acidic crust uniformly over the earth's surface and its thickness will be less than the theoretical; why should magmatic differentiation have stopped before reaching its limit? and supposing it did, why should the acidic crust have fled from very large parts of the earth's surface and piled itself to its theoretical thickness over the remainder? Surely we should have uniform crust covered with a shallow sea. Splits would form as required by this theory, and possibly make deeper parts of the sea, but these would be long thin deeps and not huge areas.

The lecture is well illustrated with figures, but a little more explanation of the maps might have been given.

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AMMONITES FROM THE SHENLEY LIMESTONE.

SIR,—From Dr. Spath's letter in your last number it appears that Dr. Kitchin and Mr. Pringle still refuse to credit any evidence telling against their opinion as to the stratigraphical position of the Shenley limestone.

I dealt fully and fairly with this opinion, showing it to be erroneous, in my paper on the sections around Leighton Buzzard published in *Quart. Journ. Geol. Soc.*, vol. 78 (1922), wherein the facts respecting the ammonites now in question were incidentally stated (p. 47). I need not reiterate the statement on this point or the general argument, but will take the opportunity to mention that I have continued to keep the sections under observation, and that all the new facts disclosed during the last three years through the enlargement of some of the pits and the opening of others have been consonant in every respect with my former descriptions and conclusions.

At present the southern part of the crucial section in Harris's pit is exceptionally well displayed, and reveals some small lenticles of the concretionary fossiliferous limestone in place among the iron-grit breccia. A big new pit has been opened on the western side of the road just north of Miletree Farm, exposing a good section resembling that of the old pit east of the road, now disused and obscure. To any geologist acquainted with the prevalent characters of the base of the Gault, a careful examination of these two sections, with a glance at those of the pits lying between them, will be more convincing than any verbal argument or description can be. But the visit should be made in dry weather, as the guttering of the superincumbent Gault renders the sections obscure and difficult of access after rain.

The attitude adopted by Dr. Kitchin and Mr. Pringle in this matter is exemplified throughout their letter in the *GEOLOGICAL MAGAZINE* for June, 1922, and especially by their treatment therein of the evidence from Long Crendon, a place 17 miles south-west of Leighton. I have not cared hitherto to reply to this letter, but will now briefly re-state the facts as regards Long Crendon.

The late A. J. Jukes-Browne described in his Gault Memoir (*Geological Survey*) a section seen by him at this place in 1885, showing Gault clay overlying a thin ferruginous pebbly bed containing in places "lumps of calcareous stone". This bed was classed by him as "Lower Greensand", and therefore was not further dealt with in his Gault Memoir. In the same year the Survey Fossil-collector (Mr. J. Rhodes) visited the locality, and collected some fossils in gritty calcareous stone, which he registered as from "Lower Greensand", of course following Jukes-Browne's classification. This was 17 years before I found the same kind of calcareous stone with the same kind of fossils in the same stratigraphical position at Shenley, and I was then unaware of the previous discovery. It was indeed not until 1920, when the Long Crendon fossils were overhauled at my request, that the similarity of the material from the two localities was recognized. Because of this similarity Dr. Kitchin and Mr. Pringle, in spite of the Survey Register and the history of the discovery, refuse to believe that the fossils came from below the Gault, and actually say in their letter—"In reality there is no particle of evidence for that belief." They substitute a hypothetical explanation—"We have no doubt that the fossils . . . came from the surface," and suggest that they may have occurred in a small boulder of "red chalk". But there is no red chalk known in England which would yield this assemblage of fossils, and the "drift" in the locality is confined to a sprinkling of flints in the soil, with not the least likelihood that a small boulder of any kind of limestone could have persisted at or near the surface.

Surely, disservice is done to palaeontological science by this attitude. How can the true range and phylogeny of the fossils be worked out if the palaeontologist closes his book against facts new to his unavoidably limited knowledge of past life?

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ST. ALBANS.

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