Maryland Geol. Survey, Cretaceous). The fossils strongly recall Wealden types, and according to Mr. T. C. Chow, palæobotanist to the Geological Survey of China, are unlike any material previously reported from North China, and distinctly later in type than the recognised Jurassic forms known in the area.

The age of the overlying basalt which rests on the peneplaned edges of these beds has been roughly fixed by Dr. Andersson's discovery of a sedimentary lens carrying middle Tertiary plant remains, intercalated between two igneous flows.

Further reconnaissance will probably lead to the discovery of other Cretaceous beds with faunal evidence which will permit the accurate determination of these plant horizons. In the meantime they may be provisionally regarded as belonging to the bottom of the lower Cretaceous and comparable to the Wealden of Europe. GEORGE B. BARBOUR.

Yenching University, Peking,
December 10.

The Thirty-two Classes of Crystal Symmetry.

I HAVE just read Dr. J. W. Evans's letter on this subject (NATURE, January 19, p. 80). His object clearly is to arrange and name the classes according to their axes and other elements of symmetry. I have attacked the same problem from another point of view, that of arranging them so as to make clear what classes are derived from others by omission of half their repetitions. The resulting arrangement is very like that of Dr. Evans, the only really important difference being that I include the holoaxial classes with the dicyclic ones (calling them the holo classes). In the list below, the number following each name is that of the corresponding diagram in Gadolin's paper.

Hexadic System (characterised by a hexad axis or by a triad axis with a perpendicular plane of symmetry):
Holo-centric 45, holo-ditrigonal 49, holo-hemimorphic 52, holo-cheiral 44; hemi-centric 51, hemi-ditrigonal 54, hemi-cheiral (hemimorphic) 50.

Triadic System (characterised by one triad axis without a perpendicular plane of symmetry):
Holo-centric 48, holo-hemimorphic 55, holo-cheiral 47; hemi-centric 56, hemi-cheiral (hemimorphic) 53.

Monometric System:
Holo-centric 28, holo-tetrahedral 31, holo-cheiral 27; hemi-centric 30, hemi-cheiral (tetrahedral) 29.

Dimetric System:
Holo-centric 33, holo-sphenoidal 40, holo-hemimorphic 37, holo-cheiral 32; hemi-centric 36, hemi-sphenoidal 34, hemi-cheiral (hemimorphic) 35.

Trimetric System:
Holo-centric 39, holo-hemimorphic 43, holo-cheiral 38.

Monoclinic System:
Holo-centric 42, holo-hemimorphic 46, holo-cheiral (hemimorphic) 41.

Triclinic System:
Holo-centric 57, holo-cheiral (hemimorphic) 58.

Here a crystal is called centric if it has a centre of symmetry, and hemimorphic if there is one plane at least such that no direction on one side of it is similar to any direction on the other. A word in parentheses does not form part of the name, but if, *e.g.*, we describe a crystal as "dimetric hemimorphic," we mean that it is holo-hemimorphic or hemi-cheiral. A holo class in the monometric system has either dodecahedral planes of symmetry or dyad axes perpendicular to these planes, and in the two hexagonal systems and the dimetric system has either longitudinal planes or transverse dyads; a hemi class has neither.

Any non-centric class can be derived from the centric class of the same system and prefix by omitting half the repetitions, and any hemi class can be similarly derived from the corresponding holo class, the hemi-cheiral class being in addition derivable from the corresponding holo-hemimorphic or holo-tetrahedral class. (In the first case one of each opposite pair is retained.) Also any triadic class can be derived from the hexadic class of the same name, and if non-centric, from the ditrigonal class of the same prefix. The classes of the monoclinic and triclinic systems behave as if they were holo and hemi classes of the same system, as also do those of the trimetric and monoclinic systems. The last two systems taken together are related to the dimetric system as the triadic is to the hexadic (regarding the monoclinic as hemi and reading sphenoidal for ditrigonal), except that the monoclinic holo-hemimorphic class is not derivable from the dimetric hemi-sphenoidal class.

H. C. POCKLINGTON.

Continental Drift and the Stressing of Africa.

I HAVE read with considerable interest Mr. Wayland's letter in NATURE for December 29, p. 938, but have little to add by way of comment to what I have already written on the subject in these pages, especially as the main principles that determine normal faulting are comparatively simple.

I believe that the sinking of blocks of the earth's crust is usually the result of tension, which causes a deficiency of subterranean material and therefore of subterranean support. In areas of compression any sinking is of a different character. It may occur without fracture in a synclinal fold, or may be the result of load, either from the accumulation of material by surface agencies or over-thrusting by another mass. Normal faults with appreciable hade are only found in areas where tension prevails, though this may be purely local. An anticlinal curvature in a region of compression may determine the occurrence of tension at the surface, but as it is accompanied by excess of subterranean material, it may cause jointing but, for the time being at least, no normal faulting, least of all trough faulting. Subsequent reaction from compression may, however, give rise to a horst or even a trough, bounded by normal faults.

I cannot claim the credit of the hypothesis connecting continental drift with the origin of the moon. That is due to Osborne Fisher. I merely suggested that if this hypothesis has any foundation the possibility that the separation occurred after the earth had become the home of animal and plant life should not be excluded. There is, too, no inconsistency in supposing that the nascent moon attracted the atmosphere and the oceanic waters towards itself, but when it became separated from the earth yielded them to the greater attraction of the latter.

I should like to add that I am well pleased that in Uganda the investigation of the major structures of the rocks, which is so important for understanding the past history of Africa and indeed of the whole world, should be in the competent hands of the present Director of the Geological Survey and his enthusiastic staff. They may be trusted to work them out without any prejudice due to preconceived ideas of their nature. JOHN W. EVANS.

Imperial College, South Kensington,
January 11.

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