

sion 5 of the section were referred to Dr. W. H. Dall, who reports that "One resembles *Unio onariotes* Mayer from the Kenai formation, another *Anadonta athlios* Mayer of the same beds, but they are probably not identical. The beds are probably Oligocene or upper Eocene, like those of Kenai." Considerable interest attaches to these fossils in connection with their bearing on the distribution in Tertiary times of the Naiades, a group represented in the present streams and lakes of lower latitudes in North America by several hundred species.

Maddern<sup>o</sup> and McConnell<sup>1</sup> have reported two basins similar to the Coleen, but larger, higher up the Porcupine a short distance east of the international boundary. One of these has an approximate length of 100 miles and a width of 60 miles. No fossils were obtained by McConnell from these upper basins, but the description which he gives of the beds exposed, corresponds so closely to the sections observed by the writer, that it is highly probable that the age of the beds in the basins on the two sides of the boundary is the same. McConnell<sup>o</sup> expressed a similar opinion concerning the equivalence of the beds in question, but presented no paleontologic evidence of the age of the beds in either of the basins which he described.

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#### QUOTATIONS

##### THE UNIVERSITY OF MAINE

THE movement to remand the State University of Maine to its original purpose of an agricultural college and school of mechanic arts has failed. The University has expanded with a college of liberal arts and has been giving the bachelor's degree, and this the senior colleges of liberal arts in the State, Bowdoin, Bates and Colby, consider to be crowding an already overstocked market for

<sup>o</sup> *Smithsonian Misc. Coll.*, Vol. 49, 1905, p. 14.

<sup>1</sup> *Ann. Rept. Geol. Nat. Hist. Surv. Canada*, n. ser., Vol. 4, 1890, p. 128.

<sup>o</sup> *Ibid.*, pp. 128, 132.

higher education. Consequently, when the University came to the Legislature this year for an appropriation equal to two fifths of a mill to the valuation of the State, or about \$150,000 a year, with a backing of the majority report of a committee appointed by the last Legislature, and then accepted as a substitute for this an appropriation of \$65,000 a year for two years and \$90,000 for new buildings, the three colleges appealing to the committee of the Legislature on the subject, united under the leadership of President Hyde, had attached to the appropriation as a condition the discontinuance of the University's courses leading to the B. A. degree. In the House this amendment to the appropriation was defeated by the cyclonic vote of 123 to 12. In the Senate, however (which had made a special investigation with a recess committee of the whole subject), the vote was much closer, being, in fact, only 17 to 13 in favor of the University's retention of the right to confer the B. A. degree \* \* \* .

In the heat of the debate the dignity of the university and the quality of its scholarship have been sometimes rather roughly used. The statement made by President Hyde and repeated by ex-Senator Potter of Brunswick, an overseer of Bowdoin, that the liberal arts courses at the University of Maine are inferior to those of the other three colleges is pretty well disposed of by the statistical facts that there are eleven professors at the university holding doctor's degrees conferred by the highest institutions of learning at home and abroad, including Harvard, Johns Hopkins and Cornell in this country and Berlin and Heidelberg universities, a total greater than is found in the faculties of the other three colleges together. Mr. Carnegie, it is believed for the first time, gave the university last year the money for a library building absolutely without conditions, and by energy, thrift and the use of local materials, almost given to the university, a building has been erected for his \$55,000 equal in appearance, it is said, to one costing twice as much. Evidently this sturdy young growth from the Federal land grant known as the Morrill education fund is past all danger of being up-

rooted, and now needs only to be judiciously tended and watered.—*Boston Evening Transcript*.

#### CURRENT NOTES ON LAND FORMS

##### DRAINAGE CHANGES IN CALIFORNIA

J. C. BRANNER describes 'A Drainage Peculiarity of the Santa Clara Valley [Cal.] affecting Fresh-water Faunas' (*Journ. Geol.*, XV., 1907, 1-10), in essence as follows: A stream flows westward from the Mt. Hamilton group into the middle of the longitudinal (N.W.-S.E.) Santa Clara Valley of the Coast range, and there builds up a great alluvial fan which forms a divide on the valley floor. The stream at present flows northwest from the fan by Coyote Creek to the southern end of the Bay of San Francisco. Another creek heads in the longitudinal valley near the fan and flows southeast to join Pajaro River, which runs westward into the Bay of Monterey. A slight radial shifting of the stream on the fan would transfer it to the Pajaro system. There is good evidence that such shifting has occurred in the past, probably repeatedly, so that the waters from Mt. Hamilton have found their way alternately into the two bays. Such stream changes would permit a mingling of the faunas of the Coyote and Pajaro basins. Should a long time then elapse without further changes in drainage, the unified faunas might spontaneously and gradually diverge. At present the fishes of the two rivers are remarkably alike in most respects; some points of difference are taken to indicate the beginning of spontaneous divergence.

It appears, however, that the faunal peculiarities common to these two rivers are noted also in other rivers flowing into the two bays. As the mouths of the rivers are now separated by salt water and as their heads are far apart, a second hypothesis must be advanced to account for the community of forms, which Branner believes to require direct fresh-water connection at some former time. A former elevation of the coast, permitting the rivers of each bay to unite in a main river system, is believed to afford a satisfactory explanation for the phenomena observed.

Each of the two main river systems would then have had its own fauna, until changes on the alluvial fan, as above described, had mingled them in a single fauna common to both basins. Submergence would then dismember or betrunck the two systems, yet the isolated rivers would still have similar faunas.

Independent evidence is given of the elevation and submergence here postulated. The amount of elevation is believed to have been great. In view of this it would be interesting to know whether the possibility has been considered that, during such uplift, the two main river systems might have united in one, permitting a mingling of faunas independent of the stream changes on the fan at the divide.

D. W. J.

##### THE PENEPLAIN OF BRITTANY

E. DE MARTONNE, lately professor of geography in the University of Rennes and now in that of Lyons, gives an effective description of the peninsula of Brittany, illustrated with expressive block diagrams and photographs ('La péninsule et les côtes bretonnes,' *Ann. de Géogr.*, XV., 1906, 213-236, 299-328). Brittany is a district of greatly deformed ancient rocks, worn down for the most part to a peneplain, but retaining here and there certain residual reliefs of moderate altitude; the whole gently up-warped in Tertiary time, and now more or less dissected in a second cycle of erosion. The chief residual reliefs or linear monadnocks follow the east-west structural trend somewhat north of the middle of the peninsula. In spite of their moderate altitude (250 meters), they are sparsely inhabited; some of the peasants there are still ignorant of the French language and speak only Breton. The peneplain, admirably developed and preserved north of the residual hills, is sharply dissected by young valleys towards the bold coast; but when the valleys are followed southward towards their heads they open out on the upland. The peneplain on the southern side of the peninsula is more destroyed by revived erosion, because larger areas are here occupied by relatively weak rocks, some of which have been almost re-