

a college place in the public annals of the Nation. It is indispensable, it seems to me, if it is to do its right service, that the air of affairs should be admitted to all its classrooms. I do not mean the air of party politics, but the air of the world's transactions, the consciousness of the solidarity of the race, the sense of the duty of man toward man, of the presence of men in every problem, of the significance of truth for guidance as well as for knowledge, of the potency of ideas, of the promise and the hope that shine in the face of all knowledge. There is laid upon us the compulsion of the National life. We dare not keep aloof and closet ourselves while a nation comes to its maturity. The days of glad expansion are gone; our life grows tense and difficult; our resource for the future lies in careful thought, providence and wise economy; and the school must be of the Nation.

I have had sight of the perfect place of learning in my thought, a free place and a various, where no man could be and not know with how great a destiny knowledge had come into the world—itsself a little world; but not perplexed, living with a singleness of aim not known without; the home of sagacious men, hard-headed and with a will to know, debaters of the world's questions every day and used to the rough ways of democracy; and yet a place removed—calm Science seated there, recluse, ascetic, like a nun, not knowing that the world passes, not caring, if the truth but come in answer to her prayer; and Literature, walking within her open doors, in quiet chambers, with men of olden time, storied walls about her, and calm voices infinitely sweet; here 'magic casements, opening on the foam of perilous seas, in fairy lands forlorn,' to which you may withdraw and use your youth for pleasure; there windows open straight upon the street, where many stand and talk, intent upon the world of men and business. A place

where ideals are kept in heart in an air they can breathe; but no fool's paradise. A place where to hear the truth about the past and hold debate about the affairs of the present, with knowledge and without passion; like the world in having all men's life at heart, a place for men and all that concerns them; but unlike the world in its self-possession, its thorough way of talk, its care to know more than the moment brings to light; slow to take excitement, its air pure and wholesome with a breath of faith; every eye within it bright in the clear day and quick to look toward heaven for the confirmation of its hope. Who shall show us the way to this place?

CURRENT NOTES ON PHYSIOGRAPHY.

RECENT UNITED STATES GEOLOGIC FOLIOS.

RECENT folios of the Geologic Atlas of the United States contain more examples of physiographic features, well illustrated, described and explained, than can be here noted. The McMinnville, Tenn., folio reveals details of form and structure in a district that has been heretofore practically untouched since Safford's excellent description in the State Survey report many years ago. The Highland, at an elevation of about 1,000 feet, is surmounted on the east by the Cumberland plateau, 2,000 feet elevation, with outliers and deep marginal valleys, and broken on the northwest by the ragged rim that descends to the central basin. The Three Forks, Montana, folio includes the Madison Valley, a typical example of an extinct lake basin, forty miles long by ten wide, formed by warping a pre-existent mountain region, and drained by a thousand-foot gorge cut through the enclosing ridge. The lake sediments thus laid bare are about 1,000 feet thick and include thin layers of gray volcanic dust that fell into the lake, covered by thicker layers of reddish weathered dust that washed in from

the surrounding country; all these layers are now trenched by the axial and centripetal streams. The outlet gorge is so deep and narrow that access to the bench land of the lake basin is gained at present only by roads that cross over the enclosing ridge. This relation of terraced lake beds and outlet gorge is of frequent occurrence on small and large scale in the Montana Rockies, and has its homologue in the Vale of Kashmir, the control of human occupation and movement being much alike in all. The other folios are equally deserving of physiographic note.

TIDES OF THE BAY OF FUNDY.

BAYA FONDA, named so by the early Portuguese explorers because it reached far into the land, and now anglicized as the Bay of Fundy, has a world-wide reputation for its excessive tides, which by tradition reach seventy feet of rise and fall, and advance with the speed of a galloping horse, as many of us have learned at school. The facts as reported by Chalmers (Geol. Surv. Canada, for 1894 (1895), rep't M.) are somewhat more sober, but extraordinary enough. From the mouth of the bay, 48 miles wide and 70 to 110 fathoms deep, the bottom rises at the rate of four feet a mile over a distance of about 145 miles to the head. On the coasts adjacent to the mouth, the spring tides vary from 12 to 18 feet. Within the bay the spring and neap tides are as follows: Digby neck, 22, 18; St. John, 27, 23; Petitcodiac river, 46, 36; Cumberland basin, 44, 35; Noel river in Cobequid bay, 53, 31; the last named being the greatest tidal oscillation in any part of the bay. The flood tide rises about 20 feet above mean sea level; the ebb falls the same amount below, leaving the branch bays empty or nearly so. The tidal bore is seen in Maccan river, entering Cumberland basin, but is stronger in Petitcodiac river, entering Shepody bay. At the bend of this river, by

Moncton, 20 miles from the bay head, the bore is seen to best advantage; it rushes in 'as a foaming breaker, five or six feet high, with a velocity of five or six miles an hour.' The spring and neap tides here have 45 and 38 feet range. The ebb tide runs like a mill race; the water rapidly sinking, the bare muddy channel is exposed, and the river is reduced to a small meandering stream. It so remains about two hours, when the rushing waters of the bore are heard again, and the river is soon filled with their sweeping flood.

In this connection, reference may be made to an account of the bore from English sources, at Hang Chow, south of Shanghai, China, in the *Annalen der Hydrographie* for October.

HÖLZEL'S GEOGRAPHISCHE CHARAKTER-BILDER.

THE 37th and latest number of this beautiful and unrivalled series of chromolithographs 'for school and house' (Hölzel, Vienna) represents the gorge of the Rhine, looking southward past the Lorelei, and displaying the gently rolling uplands, with quiet farming villages and broad wheat fields, seldom entered by the stranger, in emphatic contrast with the deep, steep-sided gorge, an artery throbbing with international life, occasionally holding a town of close-packed houses where the little delta of a side stream affords foothold. The descriptive text is prepared by Penck's competent hand, and describes three stages in the evolution of the region: The general denudation of an ancient mountain range, indicated by the bevelling of the extremely deformed strata, reducing them to a *Gebirgs-rumpf*, a peneplain; a slight elevation, followed by the excavation of a shallow valley trough in the rolling peneplane, 60 to 80 m. deep and one or two miles wide, still floored with river gravel and alluvium (loess); and a much more recent elevation,

accompanied by the trenching of the gorge, about 150 m. beneath the floor of the trough. The cliff of the Lorelei and the narrows and rapids in the river beneath it are caused by a heavy quartzite bed.

THE WANDERING OF LAKE NOR.

SVEN HEDIN gives an interesting account of the apparent recent wandering of Lop (lake) Nor on the level floor of the Gobi desert in Central Asia (Peterm. Mitt., XLII., 1896, 201-205, maps), confirming the views of Richthofen as against those of Prshevalski. The desert basin contains a great accumulation of waste from the surrounding mountains; coarser and steeper sloping around the margin, finer and dead level in the central depression (790 m.); here the aneroid observed from place to place varies only with the weather and season. The chief river is the Yarkand, coming from the west, and at high water in the late summer bringing much silt; this tends to drive the lake to the southeast. The winters are prevailingly calm; but in summer the wind is generally from the northeast, often stormy, drifting the surface sand and bearing so much dust as to darken the sky (hence called Kara-buran, or black storm); this drives the lake to the southwest. The resultant of river and wind action is a southward migration of the lake, but from a comparison of various records, Hedin concludes that there is an intermittent shifting back and forth, according as this or that part of the plain is aggraded. Further account of Hedin's perilous journey across the region of dunes is given in the London Geographical Journal of October.

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CURRENT NOTES ON ANTHROPOLOGY.

THE INDIANS OF THE NORTHWEST COAST.

IN some recent publications Dr. Franz Boas has added to his valuable contribu-

tions to our knowledge of the tribes of the northwest coast.

The eleventh report of the British Association Committee is altogether from his researches. It gives notes on the shamans, and a description of their beliefs and customs; also a study of Tshimshian houses, the growth of children and linguistic particulars.

In the 'Internationales Archiv' (Bd. IX.) he reports a number of songs from the Kwakiutl Indians, giving the music, the original words and both a literal and a free translation.

From him also there appears an article on 'The Indians of British Columbia' in the Bulletin of the American Geographical Society (No. 3, 1896). This describes their general appearance, their relationship and the details of their ordinary life.

All this material is at first hand, drawn from his personal studies in this field of ethnography.

THE TEMPLE OF TEPOZTLAN.

THE 'Bulletin' of the American Museum of Natural History for November 13th contains a short article by Mr. M. H. Saville on a ruined temple near Cuernavaca, Mexico. His description is accompanied by several plates and introduces a remarkable relic, hitherto unknown. He states that it is 'the only aboriginal structure still standing in Mexico to which we can probably assign a positive date.' This he thinks can be done by the hieroglyphic inscriptions on its stones, which read the year 10 Tochtli, 1502 of our era, in the reign of Ahuizotl. He acknowledges that the ruins look much older, but he does not mention the possibility that Ahuizotl may have merely inserted his tablet in a wall constructed long before. Both descriptions and plates are interesting.

ANCIENT AND MODERN UMBRIAN SKULLS.

IN the 'Atti' of the Roman Society of