

assistant W. C. Hodgkins to make an examination of the point at Cape Lookout where great changes have been reported since the last examination; Lieutenant-Commander Brownson, U.S.N., chief hydrographic inspector, is now in New York, inspecting the *Gedney*, *Bache*, and *Endeavor*; Lieut. F. S. Carter has been detached from the coast-survey steamer *Gedney*, and placed in charge of the vessels laid up at the New York navy-yard; reports from the steamers *Paterson* and *McArthur*, which are stationed at Wrangle, Alaska, state that the weather is very favorable for work, and the results thus far attained have been most gratifying.

— The Royal academy of sciences at Turin has announced the grand Bressa prize of twenty-four hundred dollars, to be awarded at the close of 1889 for the most meritorious work or discovery in the physical or natural sciences, produced during the years 1886–89. The prize is open to the world.

— The International literary and artistic association, says the *Academy*, will not hold its next congress at Stockholm this year, as had been arranged, but at Geneva, on the 18th of September. The subjects to be discussed will comprise the right of property in *lettres missives*, the agreements as to publication and the relations between authors and publishers, the right of property in the titles of literary and scientific productions, and the assimilation of the right of translation with that of production.

— Naturalists will recall that some fossil egg-masses of insects of extraordinary size were found a few years ago in Colorado in beds referred to the Laramie period, and considered by Scudder as indicating the existence of a neuropterous insect very closely allied to our great ‘Hellgramite,’ *Corydalus cornutus*. It now appears that precisely similar bodies, at first supposed to be of vegetable origin, have been found in the lignites of Trets, near Aix, France, associated with *Nelumium* in beds universally referred to the lower Garumnian, or, even lower, to the Campanian; that is, to the horizon of the upper cretaceous. The Garumnian has already been compared to our Laramie group.

— The Würtemberg ministry has invited the governments of Bavaria, Austria, Baden, and Switzerland to participate in an examination and surveys of the deeper portions of the Lake of Constance, to serve in the preparation of an accurate map of the lake's bottom. A commission of specialists will meet in Friedrichshaven to decide upon the methods and extent of the proposed undertaking.

— Prof. G. Dewalque of Liège, the secretary of the Commission of the International congress of geologists on the map of Europe, desires to sell his large library *en bloc*, and wishes to know whether some individual or institution will not make him an offer for it on the basis of a catalogue of its contents.

— The output of shad hatched by the U. S. fish commission up to the present time has been 12,000,000. These have been sent away, as fast as hatched, to various streams, and deposited: 356,000 have gone to the Cheat River at Grafton; 370,000 to the Chattahoochee, Georgia; 626,000 to the Chickahominy; 329,000 to the Dan; 758,000 to the Mattaponi; 385,000 to the Pamunky; 1,110,000 to the Occoquan; 757,000 to the Shenandoah; 380,000 to the James; 379,000 to the Appomattox; 603,000 to the Monocacy; 609,000 to the Patuxent; 1,234,000 to the Rivanna; 390,000 to the Accokeek Creek; 389,000 to Aquia Creek; 1,270,000 to the Rapidan; 391,000 to the North Anna; 1,070,000 to the Rappahannock; 1,282,000 to the Little Falls of the Potomac; 1,586,000 to the Hudson; and 1,000,000 to the Colorado. All of these fish are not, of course, counted and numbered. They are measured in the jars. It is known by actual count how many eggs are necessary to fill a jar to the depth of an inch. A quart, it is estimated, will hold 28,000 eggs.

— New discoveries of petroleum in southern California are causing much excitement, says the Los Angeles *Herald*. A well recently bored in Ventura county is yielding fifty barrels of oil daily.

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

Some devices for teaching historical geography.

A FRIEND having called my attention to some suggestions, in *Science* of April 9, on maps suitable for history classes, it has occurred to me that perhaps the results of several years' experimenting with different devices for teaching historic geography might be of interest to some of your readers.

That helps are needed to illustrate the intricate territorial changes of continental history, scarcely requires to be further emphasized. Much of history, indeed, is little more than the record of such changes. The contrast between the hopeless confusion of many important epochs when studied without historical maps, and the beautiful clearness of the same epochs with the maps, is simply astounding, and is the true warrant for the time honored claim of geography as one of the two eyes of history.

Having become impressed, after a deal of unsatisfactory teaching, that better machinery than the ordinary is almost a necessity, I have spent considerable time and pains trying different devices. For several years I used a map of Europe permanently

painted on the blackboard, and, to show territorial changes, filled in with colored crayons. This method has the great advantage of growing before the class, changing with the history. But it is wanting in cleanness and accuracy, requires much disagreeable labor, and involves destroying the boundaries of the one period before putting on those of the next; so that the eye cannot compare the two stages.

Accompanying this device, I have used that for the pupils which you suggest; i.e., small uncolored outline-maps, to be filled in for successive epochs by the student himself. My class in medieval history last year was required to make eighteen of these. To get the outline-maps, we have copies made by the hektograph process. Tracing-paper can be used to get the first copy, thus bringing this scheme within the reach of every teacher.

We also use your scheme involving a series of wall-maps for successive epochs. With other teachers I have often felt the need of cheap printed outline-maps, to be filled in in the course of the work. In lieu of such outline-maps, we have gotten along pretty well by the use of white holland, which is sufficiently translucent to be used like tracing-cloth; so that the labor of carefully drawing the map has to be performed but once. This material we buy in quantities, so that it costs but twelve cents and a half per yard. To secure the requisite width, two or more pieces can be sewed together. Being strong to resist wear and tear, for maps it is about the most satisfactory material with which I am acquainted.

But the best device, by all odds, which we have yet hit upon, is a system of ground-maps with superposable fractional maps. The original map we mount on a soft pine back, and indicate every change by overlaying it with fractional maps corresponding in natural features to the original, but colored in such manner as to show the altered political relations. Thus, having a map of Italy divided and colored to show its political condition before 1859, — with Sardinia and Piedmont red, Austrian territory yellow, Parma orange, Modena gray, Papal States brown, Tuscany olive, and Naples purple, — we tell the story of Magenta and Solferina; then lay over yellow Lombardy a red Lombardy, to show its acquisition by Sardinia; and a green Savoy and Nice over the red Savoy and Nice, to show how France exacted them as the price of her assistance. Then, on Victor Emanuel's acceptance of the offered sovereignty of Parma, Modena, Bologna, and Tuscany, a red patch is tacked over these districts. So a red Sicily and a red Naples are laid on when Garibaldi's work is done. A red Ancona and Umbria finish the work for 1860. In 1866 Venetia is covered with red; and in 1870, the remainder of papal territory.

During the year we have worked out sets for the territorial history of France from 1550 to 1870, of Prussia from 1400 to 1866, of the Ottoman empire from 1680 to 1866, of western Europe from 395 to 888, etc. From no other plan have we obtained results at all comparable with those of this year.

The advantages of this device are apparent. It is superior to the series of maps, because, 1°, it changes with history; 2°, a more definite concept of the changed territory is obtained when it can be taken off and handled as a piece of cloth; 3°, the student can be set to work out the changes for himself, — to build up or take to pieces the map; and, 4°, it is less expensive, involving but one or two full-sized maps. It is superior to the blackboard

scheme, because, 1°, it is clearer; 2°, it is more accurate; 3°, it is easier to reproduce, and so not too difficult for the student and the overworked teacher; and, 4°, it preserves both the original condition of things and the changed order, each of which can be reproduced in turn, and thus the exact nature and extent of the change can be clearly and definitely seen.

Incidentally, the use of a soft-wood back has suggested several little devices which we find quite helpful. For battles we use a bright red spear-head of stiff cloth fastened with sealing-wax to the head of a needle. These, being removable, are placed on the map just where events call for them; can be made large enough to show across any room without permanently disfiguring the map; do not crowd regions like the Netherlands, where many battles have been fought, till the confusion is hopeless; and, finally, furnish, in putting them on, a useful exercise for the student. Similarly, we use a yellow star on a black circle for treaties of peace, and lines of colored braid to follow expeditions, such as Alexander's or the crusades. Doubtless other expedients of the same nature will suggest themselves.

F. M. TAYLOR.

Albion, Mich., May 28.

Some Ojibwa and Dakota practices.

Science (vol. iii. No. 57) records on p. 298 the discovery of human bones suggesting cannibalism in a cave near the village of Holzon Brunswick, reported to the Berlin anthropological society by Professor Nehring. "It is the first evidence discovered," says the author, "that a race of anthropophagi ever existed in Germany. The bones were not fully calcined, and had evidently been chopped to obtain the marrow. As a still greater proof of cannibalism, it was shown that the bones were thrown in a heap, as if cleared after a meal. . . . In the subsequent discussion Professor Virchow raised some objections to the cannibal theory."

A case like the one in question might sometimes, probably, be referable to exceptional cannibalism; that is, to an act of cannibalism committed under extraordinary conditions, by a race not commonly addicted to the vice, and even in general, perhaps, abhorring it. In solving problems of this sort, it becomes a pertinent inquiry, how savage man of the historic period actually 'takes his meals,' if such they may be called, and whether or not he practises disposing of the residuum of his food in the orderly manner indicated above.

An instance of man-eating, with its attendant circumstances, occurring among the wild Ojibwas of Lake Pokegama, Minnesota, is cited below. It is put on record in this place for the purpose of illustrating exceptional cannibalism in non-cannibal tribes, and of showing how, half a century ago, Algonkins and Dakotas still inhabiting the north-west were accustomed to hew in pieces, distribute, and leave to be gnawed by animals, the slaughtered bodies of their enemies. The given facts, furthermore, emphasize the possible co-existence, in the same aboriginal community, of two widely differing grades of civilization, particularly in the case of savages just emerging from barbarism in virtue of their association with enlightened races.

It should be stated that this paper has been prepared from verbal and written material kindly