To those with whom he was associated in work, or who were otherwise privileged to know him intimately, his prolonged but splendidly heroic struggle with a fatal disease, together with the uniformly high standard of performance which that struggle did not sensibly affect, will ever remain an inspiring example of the best of human qualities.

T. C. M.

CURRENT NOTES ON PHYSIOGRAPHY.

MILNE ON SUBOCEANIC CHANGES.

THIS topic, already noted in SCIENCE (September 3, 1897), receives further details (London Geog. Journ., X., 1897, 259–289), which will well repay study. Their practical importance may be inferred from the expense—half a million sterling—of fifteen cable repairs necessitated by submarine disturbances. Their specific character appears in the items of place and date, as well as in the photographic illustrations of torn cables, gathered by the author with much care from usually inaccessible sources. Their novelty is illustrated in such items as the following: "The Bilbao cable broke down periodically, usually in March during or after a heavy northwest gale, at a point about thirty miles off shore; when repaired, it was invariably found that three or four miles of cable had been buried. This is attributed to a strong submarine current, caused by the piling up of surface water by the wind; the under current crossing the drowned prolongation of a river valley with steep walls, which, when undercut, fell in masses." Again: "The military and naval reserves were called out in Australia, in 1888, when the simultaneous interruption of two cables cut off communication with the rest of the world for nineteen days and gave rise to the fear that war had broken out in Europe." The physiographical interest of the article comes from the constant association of cable fractures with the steeper slopes of continental margins where the submarine contours are not only irregular but variable; this being in strong contrast to the undisturbed condition of cables in deep water on a soft level bottom, of which Kipling says:

> There is no sound, no echo of sound, in the deserts of the deep,
> Or the great gray level plains of ooze where the shell-barred cables creep.

Near the continents, slopes of 1 in 7, or even 1 in 3 are discovered. Changes of depth amounting to 100 or 200 fathoms are determined by soundings before and after cable fractures in regions of disturbance.

In conclusion, Milne makes two suggestions: First, that he would be glad to receive (at Shide Hill House, Newport, Isle of Wight, England) details regarding cable interruptions in any part of the world; second, that seismographs, similar to the one he has on the Isle of Wight, should be installed in various countries, their cost being about £50; this suggestion being adopted by the British Association, whose circular on the subject may be obtained from their Seismological Committee (Burlington House, London, W.).

HATCHER'S EXPLORATIONS IN PATAGONIA.

PRIMARILY with the object of collecting fossil mammals, Princeton University sent J. B. Hatcher to Patagonia in January, 1896. He returned in July, 1897, and after leaving reports on his geological and geographical results (*American Journal of Science* and *National Geographical Magazine* for November) he has gone out on a second expedition. The geographical description gives an excellent picture of the Patagonian pampas. They consist of a heavy series of fresh-water (continental) deposits, deeply cut by west-east valleys and strewn over with drift from the Andes, morainic near the mountains and water-washed farther east. The terraces, by which succes-

sive plains descend toward the Atlantic, famous since Darwin's voyage, are accounted for as sea cliffs, cut during the recovery from a period of depression after the valleys had been eroded. Volcanic cones and lava flows give some variety to the region. Salt lakes are barred in valleys behind the sand reefs of the former shore lines, and their salt is explained as having been retained since a part of the ocean was there enclosed. This conclusion, as well as the implication that salt lakes are usually supplied by salt springs, seems open to question; but as a whole the geographical descriptions are much more lucid than those that one usually meets in geographical magazines.

THE ST. CROIX DALLES, MINN.

A THESIS by C. P. Berkey, University of Minnesota, discusses the 'Geology of the St. Croix Dalles' (*Amer. Geol.*, XX., 1897, 345–383) and throws much light on the geography of the district, which seems to be one of special interest. Cambrian strata lying unconformably on pre-Cambrian igneous masses constitute the bed-rock of the region. Heavy glacial deposits, morainic and washed, overspread the bed-rock and determine much of the surface form. Large glacial rivers and the discharge of the glacial West Superior lake have carved important valleys, of which the rock-walled dalles attract most attention. Several abandoned river-courses contain lakes, some of which seem to belong in the rare species of pools excavated by the plunge of extinct falls.

SURFACE CURRENTS OF THE NORTH SEA.

OBSERVATIONS made for the Fishery Board of Scotland on the surface currents of the North Sea, chiefly by means of floating bottles, are discussed by T. W. Fulton (*Scot. Geogr. Mag.*, XIII., 1897, 636–645). A tolerably regular circulation around the margin of the sea is found at an average rate of two or three miles a day, southward on the west, northward on the east side of the sea. The velocity varies with the winds, and after a period of unusual and persistent southeasterly winds in December, 1896, and January, 1897, the current was reversed along the coast of Great Britain. The currents are, therefore, ascribed to the prevailing westerly winds, which drive the water towards the eastern side of the sea and tend to heap it up there. In the firths the currents are irregular, varying with winds and tides.

W. M. DAVIS.
HARVARD UNIVERSITY.

CURRENT NOTES ON ANTHROPOLOGY.

THE UNITY OF THE HUMAN SPECIES.

LITTLE is now written about 'monogenism' or 'polygenism.' To the physical anthropologist that question is quite absorbed in the wider one of 'variation.' But the psychical unity of the species is still lacking definition. A noteworthy contribution to it is one by the Marquis de Nadaillac in the *Revue des Questions Scientifiques* for October last. He points out the unending similarities in implements, arts, funeral rites and religious symbols in tribes of like stages of culture in all times and places.

That these are proofs of psychic identity there can be no doubt. But it is not quite clear how the author interprets them. In some passages he speaks of such customs and inventions being 'handed down from unknown ancestors by generation to generation;' while elsewhere he says the solution lies 'in the identity of the mind of man in all periods and in all regions.' The latter is the position which is most acceptable to the trained ethnologist.

LOCAL ETHNOGRAPHIC COLLECTIONS.

IN the rapid changes of American history the mode of life of one generation is scarcely known to that which follows it. Hence the value of collecting, while we can, those ob-