SCIENCE.

FRIDAY, SEPTEMBER 26, 1884.

COMMENT AND CRITICISM.

THE historical method is now applied to the solution of so many questions of every-day life, formerly studied in the light of philosophy, that the formation of an American historical association really marks the opening of a new era in the history of scientific research. Henceforth historical students, like other scientific men, will have an opportunity to make themselves known, without awaiting the tardy recognition of a publisher. It is for the future to show whether the high standard already set up can be maintained; but, assuredly, there is no reason why the meetings of the association should not be the chosen place for the best students to make known the results of their labors.

IN 1872 Professor Asa Gray relinquished to younger hands all instruction in botany in Harvard university, in order that he might give his time to the completion of the 'Flora of North America.' Notwithstanding the many serious encroachments which have been made upon his time by the demands of the herbarium, by the voluminous contributions to the proceedings of the American academy, by his editorial work in connection with the *American journal of science*, by the revision of his text-book, and by his very extensive correspondence, he has carried a second volume of his great treatise through the press. It seems proper for us, in connection with the review of this volume in another part of this number, to remind our readers of the forcible and yet pathetic appeal which Professor Gray has more than once made in behalf of an exemption for himself and Mr. Sereno Watson from the time-consuming task of answering notes of inquiry respecting the more common plants of our flora. Thanks to botanical activity at various places throughout the country, beginners can have their questions well answered by local societies, while more advanced students can now easily confer together in regard to the more difficult points. By such sifting as this would bring about, the number of questions which should properly be referred to the herbarium would be surprisingly diminished. It must seem plain to every one of our readers, upon reflection, that it cannot be discourteous, in the officers of our larger collections which are now being utilized in the preparation of works of reference, to quietly ignore those letters which ought never to reach them.

WE owe our readers a word of explanation, which we make this week, *apropos* of the long letter of reclamation on another page. It is the aim of *Science* to express just and impartial criticisms whenever they are called for, and it is our intention to continue the pursuit of this aim. We regret extremely if any one believes that we are animated by any unjust prejudices against American work; but it is evidently our duty to be, if any thing, more outspoken in regard to American than to foreign scientific labor. In writing of our own country, we do not wish to let false pride substitute laudation for justice, neither do we wish to praise any thing merely because it is from abroad. It is a heavy accusation which our correspondent makes against us, and we hope our readers will acquit us. Dr. Salmon's assertion that American work on Microbia includes some of the best researches on the subject does not coincide with the opinion of competent and uninterested judges. We must therefore still adhere to the judgment we have expressed as to the relative value of American contributions to the knowledge of micro-organisms. If Dr. Salmon's own work is recognized hereafter to have the value which he assigns to it, we shall be very happy to acknowledge the

change of opinion on the part of those in whose decisions on the matter we have full confidence.

It is quite impossible for congress, when it grants an immunity to colleges in the importation of printed matter duty-free, to set forth in detail the administrative processes which are necessary to secure its purpose. Congress acts on the assumption that the executive departments of government have wisdom enough in so ordering details, that the purpose of congress shall be adhered to, and that education shall have the advantages the people, through them, have decreed. Everybody but an executive routinist, whose perceptions are dwarfed by his habit, sees a higher claim in the spirit than in the letter of a law. It were a libel on barbarism to stigmatize as barbaric the recent decision of the treasury, which requires twelve oaths a year and attendant time and money for a monthly periodical to secure a free entry. Let us commend to the astute revenue-officials the story of Poor Richard and the barrel of salt beef, when a single grace over the whole could save for twelve-months' dinners a considerable fraction of the time allotted to the poor dwellers of the globe. Further let them remember graces at dinner do not cost notary's and justice's fees.

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.*

The Ohio earthquake.

A slight earthquake was felt here at 2 h. 43 m. this afternoon. Hanging lamps were made to vibrate, and at one of the public-school buildings a panic occurred among the children. The shock was not noticed by those who were busily employed at the time. No attempt was made to measure its direction or force.

E. T. Nelson.

Delaware, Ohio, Sept. 19.

The steep slopes of the western loess.

In Mr. Macfarlane's paper on the formation of cañons and precipices (*Science* for Aug. 1), there is a discussion of the cause of the steepness and permanence of the slopes in the loess region of the west. The fact is certainly a striking one. But Mr. Macfarlane's explanation, likening it to 'a well-built piece of miniature natural earth masonry well bound together,' scarcely does justice to the subject. For, in the first place, the steep slopes recur in the typical loess, even *after it has been moved and worked over;* especially after it has lain for a few years, so that a slight 'binding-together' of the particles by calcic carbonate is renewed. In the second place, the form of the loess particles is, as a rule, not flattened, but roundish; as can readily be seen, when the sediments from a mechanical analysis of the material are examined. But this general roundness of the particles is accompanied by an extreme roughness of surface, precisely such as is seen on the large scale in the 'loess puppets' themselves. The entire mass, in fact, consists of small calcareous secretions, with rough concretionary surface, intermingled with a comparatively small proportion of fine dust and clay (see *Amer. journ. sc.*, n. s., vii. 10); and, when treated with dilute acid, the whole frequently becomes altogether impalpable. These rough concretionary sand-grains naturally can move only with great friction in the mass; and the latter being, moreover, very porous, absorbing instantly even a copious shower, there is little opportunity for washing away. Aside from these purely physical causes, the rapid formation of a tissue of cryptogamic fibrils and gummy matter (mostly moss prothallia) on the fertile material, soon binds the surface, and imparts additional stability.

E. W. Hilgard.

Berkeley, Cal., Aug. 20.

An open polar sea.

In an article in the New-York *Herald* of Sept. 10, Joseph W. Cremin, A.M., comments upon some remarks made by me before the British association at Montreal, in regard to the theory of an open polar sea. Mr. Cremin agrees with Lieut. Greely in the belief that there is such a sea, but fails to put forward any facts in support of his theory. And in view of the fact that so far we have found nothing but ice along the southern border of this unknown region, it is fair to presume that the ice-cap extends over the pole, unless facts can be brought forward to prove to the contrary.

Now, the facts that have convinced me that there is no permanent open water are these: 1°. Migratory birds do not pass into this region beyond the highest known land; and there is a decrease of animal life as you go north, both in the sea and on the land. Also the annual mean temperature falls as you approach the pole. 2°. The ancient ice which is being constantly displaced by the new ice that forms in the cracks opened by tides and gales is constantly coming down from the higher latitudes. If there were an open sea to the north, would this be the case? It naturally yields toward the side of the least resistance. 3°. The water in the Arctic Ocean stands at a temperature of +29° F. from October until June, with a range of less than .3 of 1°. Off the northern coast of North America, the currents are variable; and if there were an open sea, which must necessarily be a warm sea, around the pole, we should have a variable temperature in the sea-water. 4°. There is less than 1,300 miles of this unexplored region on a line drawn from Lockwood's highest, over the pole, to North-east cape, Siberia. Now, if there were a sea of warm water in this comparatively small space, we should have in the region surrounding it a meteorological condition which does not exist. We should have a vast amount of precipitation during the winter, with cloudy weather; instead of the clear dry weather, with frequent calms, that we do experience. And the amount of precipitation decreases as you go north.

The difference in temperature between the flood