SCIENCE.

FRIDAY, JULY 11, 1884.

COMMENT AND CRITICISM.

THE increasing number of international scientific congresses whose function is the establishment of common points of departure, and the unification of standards of measure both as to dimensions and nomenclature, is a hopeful sign of progress towards the 'millennium' to which men of science are unquestionably nearer than their political brethren. It is delightful to find that there are so many important matters concerning which scientific men representing many nations and many languages find themselves in perfect agreement. Although in many instances a surrender of some personal or patriotic claims has been demanded, this has been generally acceded to with little protest, to the end that universal advantage may be the outcome. When work of this kind is done, it should be done for all time to come; at least, what is definitely fixed upon should be of such a nature that it will not need undoing in the near future.

In this respect the report of the electrical congress is something of a disappointment. The congress seems to have reached its conclusions in undue haste. Indeed, the electrical units as now defined are less precise and scientific than before. The reference of the practical units to those of the C. G. S. system was in itself admirable and satisfactory. With the new definitions, one only, that of current strength, has a precise relation to the fundamental units: the others have become arbitrary. Would it not have been better to adhere to the original ohm, and to define the mercury unit as provisional? The new mercury unit is obtained from measurements that differ among themselves by more than two per cent. Besides, the verdict was made up before the results of Professor Rowland's exhaustive investigation, now in process, were in the possession of the congress, although this investigation was admitted to be one of the most important. A provisional mercury unit of a hundred and six centimetres would have satisfied all practical demands, and would have been subject to such correction as future research indicated to be necessary. As the matter now stands, the elegance and simplicity of the system is destroyed by the introduction of arbitrary units, the value of which may some time be found to be considerably different from that now assumed.

While the congress might have acted more wisely in the opinion of many, in the matter of the ohm, in its definition of the standard of light it would certainly have done well to postpone action for the present. It appears, that, because nothing better was offered, the square centimetre of fused platinum was adopted. Although this is a matter which is greatly in need of adjustment, there can be little satisfaction in the adoption of what is, as nearly as may be, an impossible standard. There must have been a paucity of suggestions as to a suitable standard; which is singular, considering the prominence of the problem of measuring intense lights. And in recommending that all records of observations of atmospheric electricity and earth-currents should be sent to the international bureau at Berne, the congress simply acknowledged our present ignorance.

BIBLIOGRAPHIES of special authors have but an ephemeral value, if made during the life, or at least during the activity, of a writer. It would therefore, in our judgment, have been better to restrict the one just issued by the National museum, and fully described in our notes, to Professor Baird's direct contributions to science, which have avowedly ceased, and

to postpone mention of those undertaken with the assistance of many collaborators (which record the advance of science through the researches of others), or dealing primarily with applied science. However important this latter work may have been, — and we should be far from underrating its importance, especially in the development of science in America, — it not only hinders a proper retrospect, an independent *coup d'oeil*, of his remarkably extensive and valuable contributions to the vertebrate zoölogy of North America, but it seems to demand, at some future time, a repetition of this work, with its almost painful detail and voluminous indexes. The first was the only pressing need: for the other, we could have contented ourselves for the present with the indexes of the everywhere procurable annual records, Smithsonian reports, and fish-commission publications.

A scientific friend, himself a bibliographer, does not look with complacency upon the announcement that similar bibliographies will be given of other still living naturalists. He asks whether those directing or engaged upon this work could not turn their bibliographic energies to better account in another direction. Fathers of a broad science, or pioneers in a vast field, who cover that field, are few indeed; and only their bibliographies, when carried out with the fulness of that which furnishes us our text, can have any possible permanent, or even great temporary, value. What are really wanted are topical and geographical bibliographies, which shall lighten the labor of the expert, and lessen the chances of incorrect statement, and, above all, of unnecessary re-statement. These are the true aids to progress for a generation burdened with a literature vast, ill-assorted, inchoate. Individual bibliographies do not penetrate its depths. Let our zealous bibliographers devote to such work the same time and pains they would give to that proposed, and the result will be of tenfold immediate value, and it will have at least some lasting worth.

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 zero meridian of longitude.

In arranging meridians for perpetual usefulness and the best practical results, the location of the 180th degree is of far more importance than that of zero or any other.

When we meet a ship of another nation at sea, we determine upon speaking, one of the most important objects of which is to compare longitudes. We do exchange longitudes, but on comparison we find a large difference between them. Then the question arises, Is one of our chronometers wrong, or are we mistaken as to the meridian from which the other ship reckons her longitude? This ship, by this time, is beyond the reach of our further inquiry, and hence the question cannot be satisfactorily answered. We are in more doubt than before speaking, confusion has been worse confounded, and only because we do not know positively the other's zero meridian. Among merchant shipping, on long voyages, just this sort of trouble occurs constantly, perhaps daily, to the great enhancement of risk to the safety of ships, cargoes, and crews.

Again: an English or an American ship is in mid-Pacific, steering east; crosses the 180th degree of her reckoning, from Greenwich; and then meets a French ship standing west, which has crossed the 180th degree from Paris. They speak, and each asks the other to report him at Lloyds. They arrive in their respective ports, and each reports the other, as requested: but one report states that the speaking occurred on one day, say Monday, the 1st of a month; and the other on another day, say Tuesday, the 2d of the same month. But I will not multiply instances. These two will give some idea, though faintly, of the risk to property and life, as well as the confusion of dates, caused by the present unsettled condition of meridians.

If the 180th meridian were universally recognized as passing through Bering Strait, it could be so projected as to pass clear, or nearly so, of all land throughout its entire length; and, this being true, it could be made the dividing-line of days, naturally and properly, with the greatest possible advantage to everbody everywhere.

If a meridian passing through Bering Strait were adopted as the 180th, then the zero meridian would pass through central Europe, and enter Africa near Tunis, and the Atlantic Ocean from the coast of Guinea, thereby giving Norway, Denmark, Germany, Austria, Switzerland, and Italy the opportunity of having their national observatories upon it, on their own soil.

C. Borum.

Norfolk, Va., June 5.

Crystallization of glucose in honey.

A gentleman of our city who is engaged extensively in bee-culture has furnished me with the following rather remarkable incident: —

On opening a cap of honey that had been made subsequent to July 1 of last year, it was discovered that the entire bottom was covered with a layer of some peculiar white powdery substance never before observed. Such an occurrence being new to him, he conferred with some of his acquaintances, also engaged in bee-raising, but with the uniform result of furnishing each with a bit of news. A sample of the white substance was submitted to me, and on exami-