SCIENCE.

FRIDAY, AUGUST 29, 1884.

COMMENT AND CRITICISM.

As we go to press the British association for the advancement of science is opening its first meeting on this side of the Atlantic. Although the acceptance of the urgent invitation to the British association by the Canadians was tardy, and at first reluctant, the English have responded at last with hearty good will; and the flood which entered Montreal on the early days of this week put the elasticity of the hotels, and the generosity of the people, of Montreal to the severest test. Though some of the scientific men, best known to fame and the American public through their former personal visits, or their writings of a general interest, — men like Tyndall and Huxley, Hooker and Lubbock, — have not come to the meeting, there are present on the opening day a sufficient number of the leaders of science to insure a notable gathering, and to well repay such of their American brethren as have taken long journeys to meet them. Many of our own countrymen are in attendance, glad to be among the first to welcome their colleagues; and many more would doubtless have come, did they not fear they would infringe too much on hospitalities intended for the honor of transatlantic friends. It is estimated that about eight hundred have crossed the Atlantic to attend the meeting, as members or associates, and that at least six hundred more have been enrolled from Canada and the United States, including the fellows of the American association who have accepted honorary membership.

The arrangements of the local committee have been as thorough and careful as could be expected. The rooms devoted to the use of the association leave, indeed, something to be desired, as many of them are far too small for convenience; but they have generally the advantage, not only of close proximity to each other, but of an airy situation on the upper edge of the city, which may be welcome before the week is out. But, in the halls of McGill college and its affiliated institutions, accommodation was not found for all; and the sections of geography and statistics have been assigned to rooms a quarter of a mile distant, in the city proper. The local committee has thoroughly canvassed the city, and printed a list of places where lodgings may be had. Each member is provided with a handbook of the Dominion of Canada, — a generous volume, accompanied by maps, containing all one could desire, excepting an index, and a plan of Montreal. The latter, however, is printed most conveniently on the back of the large, folding members' tickets. Evening *soirées* and garden-parties, with excursions in abundance, are planned at various times during the meeting; but the sessions are unbroken by any 'lunch,' except such as individuals may obtain at any time for a pittance, in a tent on the university grounds.

The sections meet daily at eleven, and continue in session for five hours without intermission. One sees the association here as he sees it in England, holding its traditions untarnished. In one matter, however, they have given way to Canadian solicitation by permitting the meeting of the association to be opened in American fashion, by addresses of welcome from the city of Montreal, holding a special session for the purpose. One point in which the association meetings differ notably from our own, is in limiting the attendance at all meetings, addresses, and lectures, as well as at all festivities, to members of one class or another. Such a restriction in our own association would doubtless be an additional incentive to membership in places where it holds its meetings and it could certainly prove no bar

to membership in other quarters. The meeting bids fair to be every thing its promoters could desire.

THE recent earthquake suggests two lines of unsatisfactory reflection. The number of appreciative observations of the shock, discoverable by careful search through many newspapers, is extremely small, although the movement of furniture, the swaying of suspended objects, and the overturning of chimneys, gave ample opportunity for critical examination. Records of time are also inaccurate in the highest degree. Seconds are rarely given, and there is no statement as to the error of the timepiece. In place of this, the temperature of the air, the direction of the wind, and the 'strange appearance of the sky,' are frequently mentioned, as if these irrelevant phenomena were of the highest importance. In a country where earthquakes are, happily, as rare as here, it would not be fair to expect that very many persons should take full advantage of their unlooked-for opportunity of earthquake study; but after making all due allowance for the infrequence of shocks, and for the small share of school instruction bearing on seismology, the general absence of critical observations is disappointing.

More remarkable than the earthquake, more surprising than the lack of observations, is the readiness with which some of those who ought to know better have committed themselves to explanations of the origin or cause of the shock, on the demand of the all-absorbing newspaper reporter. From one professor we learn that the shock "originated somewhere about the Rocky Mountains, and travelled eastward;" another was inclined to refer the disturbance to the "sliding of granite and trap strata, caused by contraction and expansion;" others still, hold to the gratuitous generalization that "every earthquake-shock is an uncompleted effort of nature to create a volcano." Such a variety of opinion fully justifies a reporter's rather sarcastic conclusion: "Thus the three professors differed from each other in their views." This difference is the more to be regretted, as there was excellent ground for agreement in answering the reporters. It would have been very safe to reply, "When we know what has really happened, we may be able to say something more about it."

THE necessity of irrigating extensive tracts of the west has taught us that irrigation has its advantages. The crops raised under it are not only larger, but more reliable, than those of districts where irrigation is not considered necessary. It is somewhat as though the farmer could control the amount and frequency of rainfall and it; shows, that, in countries where the rainfall is abundant, it is distributed in a manner that comes far short of the best. In some parts of the west there is water enough for irrigating purposes, but it flows in large rivers which it would require great expense to turn upon the land. The Upper Missouri and Yellowstone rivers belong to this class. They flow through arid but otherwise fertile districts. They are large and permanent streams, and it seems a calamity that they should be allowed to run forever to waste.

The suggestion of a contributor in another column, that the government take time by the forelock, forestall monopoly, and lead population into this section by establishing gigantic irrigating-works for the utilization of this valuable water, is not so wild as many of the schemes that actually have been put through Congress; as, for example, the Pacific railroad schemes. Is agriculture any less important than commerce? Yet it seems as though, in this chiefly agricultural country, it is the only interest that is unable to obtain a hearing. It has not even a cabinet officer to represent it. To judge from the space assigned to it at the Centennial exhibition, as compared with that devoted to war, for example, one would have supposed that war was the leading occupation of Americans, rather than agriculture. The question of irrigating the arid but irrigable portion of our public domain is destined to

become a leading one in the near future; and our statesmen will do well to begin soon to give it their thoughtful attention.

LETTERS TO THE EDITOR.

Increase in growth of young robins.

THE past season my attention had been attracted to the rapid growth made by a nest of young robins on our porch. Early in July another pair of robins built a nest on a bracket on the same porch, in which the female laid three eggs. I carefully watched the nest, to note the appearance of the young, as I had determined to accurately weigh the young birds daily, after hatching, as I was curious to learn just how much they might increase in growth during each succeeding twenty-four hours, up to the time of flight. On July 28, two eggs hatched, the third being infertile. At two o'clock, July 28, I weighed the young birds separately, as I did for the next twelve days at about the same hour. I have designated the birds as 1 and 2; and the following figures represent their increase in weight in grams: —

No.	JULY.			
	28.	29.	30.	31.
	Grams.	Grams.	Grams.	Grams.
1	5.8	8.7	14.3	21.15
2	6	10	14.7	24

No.	AUGUST.								
	1.	2.	3.	4.	5.	6.	7.	8.	9.
	Grams.	Grams.	Grams.	Grams.	Grams.	Grams.	Grams.	Grams.	Grams.
1 . . .	25	33.8	42.5	43.75	51.2	52.45	52.2	53	52.2
2 . . .	26.8	34	43.5	48	52.6	55.3	57.6	57.8	57.8

The above figures are surely interesting, and will, without doubt, surprise many readers who before had no idea of the increase in growth made by the young of birds. As can be seen, the growth made by No. 1 was not so constant and steady as that made by No. 2; and, whereas No. 1 lost some in weight Aug. 8 and 9, No. 2 sustained no loss. The loss in weight was owing, I think, to the great quantity of lice which infested the birds and nest. CHAS. S. PLUMB.

N.Y. experiment-station,
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The meng-leng.

In China the sphex, or solitary wasp, makes a neat mud-cell in a crevice, puts therein the store of young insects which are to be the food of its own larva, lays its egg in the midst, closes the entrance of the cell, leaving only a minute window in the front wall, and flies away, with reason for such complacency as is produced in the feminine mind by snug housekeeping. The egg develops, the larva sucks the juices of the imprisoned spiders and flies, and finally the little wasp issues through the window, equipped for flight in the sunshine.

The Chinese call this lone, busy, steel-blue insect the 'meng-leng,' and have a peculiar notion of its habits. They say that it has no domestic nor social relationships, but longs, like other creatures, for little folk of its kind. So it makes a cot, and puts therein the child of some fruitful mother of another family, seals the infant carefully into its domicile, and then, flying frequently back from commonplace occupations, it puts its mouth to the little window of the cot, and buzzes and sings 'meng-leng, meng-leng, meng-leng!' And the little creature within, hearing itself constantly called a 'meng-leng,' believes itself to be one, and gradually and surely verifies its name, coming out in due time a perfect sphex.

So in China an adopted child is popularly and poetically called a little 'meng-leng.'

ADELE M. FIELDE.

Indian languages in South America.

Your interesting notice of recent works on 'Indian languages of South America' (*Science*, Aug. 15, p. 138) requires to be completed by the mention of the remarkably valuable treatise by the venerable traveller, J. J. von Tschudi, — 'Organismus der Kechua sprache' (Leipzig, *F. A. Brockhaus*, 1884, 534 p.). For the first time in the history of American linguistics, we have here presented an exhaustive analysis of the lexical and grammatical structure of a native tongue, fully adequate to the demands of modern study. Von Tschudi has made a long investigation of the Kechua. As far back as 1853, he published his treatise upon it, and has twice edited the original text of the celebrated Ollantadrama (1853 and 1875).

The introduction to his last work occupies a hundred and twenty-five pages, and contains a brief exposition of his views on the ancient history and mythology of the Inca race, and on the affinities of their language. Based, as his opinions are, on a most careful analysis of the tongue and on ample personal observation, they must have great weight with future ethnologists and antiquaries. To mention only one of his many novel conclusions, he denies any affinity between the Aymara and Kechua languages, and considers Bertonio's grammar and dictionary of the former (from which such affinity has been argued) as based on a local and corrupt dialect.

I would further add to your list the meritorious treatise of Giovanni Pelleschi, 'Sulla lingua degli Indiani Mattacchi del Gran Ciacco' (Firenze, 1881), where, in the scope of seventy pages, he imparts much fresh information about this little-known tongue; and, if not too remote to be called recent, it is worth while mentioning the republication in Lima, in 1880, of the extremely scarce 'Arte de la lengua Yunga,' by F. de la Carrera, — an idiom presenting many curious features, both in phonetics and structure.

D. G. BRINTON, M.D.

Media, Penn., Aug. 16.

Fish-remains in the North-American Silurian rocks.

Mr. E. W. Claypole states in *Science*, July 11, that he has come into the possession of some fossil fish which lead him to the conclusion that there are forms of fish more ancient in America than are known elsewhere. From Mr. Claypole's letter, I gather that he imagines that the upper Ludlows and the 'bone-bed' are the earliest rocks which yield fish-remains. I would direct attention to the fact that the *lower Ludlow* rocks of England have yielded the remains of fish; viz., the Scaphaspis (Lankester). The Scaphaspis ludensis was discovered at Leintwardine, in *lower Ludlow* strata, which must have been deposited long ages before the accumulation of the upper Ludlow 'bone-bed.' Soon after the shield of this fish was detected, I personally investigated the physical position of the rocks in which it was found. The Leintwardine beds are the only locality where the