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COMMENT AND CRITICISM.

THE thoughts and actions of young men of intellectual strength, in whom is vested the future fate of scientific progress in this country, are worth attention, and are of the deepest interest to those who are, or soon will be, no longer explorers of new fields. The meeting last week in New York, of the new society of naturalists, composed almost wholly of young men, was remarkable for the force and directness of the discussions, and the absence of pointless and wearisome talk. It became plain that we have men capable of the best work, and that we are preparing for a brilliant future of investigation, whenever the instrumentalities necessary for fullest success are sufficient. The spirit of independence, and the disregard of purely personal influence, were as great as could be desired. All propositions, from whatever source, met with an equal and critical treatment; and no clique or locality had the slightest claim for consideration. Philadelphia was best represented; while there was a striking absence of delegates from Washington, New Haven, and Cambridge.

THE International conference for fixing upon a universal prime meridian and a universal system of time has at length been called by the State department to meet in Washington, Oct. 1, 1884. Diplomatic proceedings are always expected to go on with a certain dignified leisure; but the arrangements for the meeting of this conference have been delayed far beyond any thing customary, even in diplomacy. The act authorizing the conference became a law in August, 1882. As there was

some doubt whether there would be a sufficiently general response to the invitation to insure the success of the conference, a preliminary circular requesting the views of the various governments interested, and an expression of their willingness to enter the conference, was issued from the State department toward the end of 1882. The responses were in some cases favorable, and in others negative or undecided. A desire was felt by the Europeans to have a preliminary discussion of the subject at the International geodetic conference at Rome in October, 1883. The feeling at this conference having shown that there would be little difficulty in the universal adoption of the Greenwich meridian, the final step of calling the conference was taken. Why so late a date was chosen we are not informed.

IN our issue of Dec. 14 we published an article under the title of 'The signal-service and standard time,' criticising the action of the chief signal-officer in not adopting the new standards of time at signal-service stations. We have since learned that our criticism was not well founded, as the information upon which it was based gave an incomplete idea of the position of the service in this matter. It is true that the observers of the service are still governed by the local times of their respective stations; but this is only a temporary arrangement, and will be changed as soon as possible. The reason of the delay is this: the international observation, which is taken at many stations of observation throughout the whole world, is made at seven A.M., Washington time. It is proposed to make this observation eight minutes earlier, or at seven A.M. of the time of the 75th meridian, which is exactly Greenwich noon; but, before this change can be made, the co-operating weather-services and numer-

ous independent observers must first be notified, and their consent obtained. Correspondence has already been begun, and a circular letter sent to all who co-operate in the international work, asking consent to the proposed change. Favorable replies are being received; and there is little doubt that the change will be made, probably Jan. 1, 1885. It should be remembered that the international observation is made largely by observers who kindly co-operate with the chief signal-officer, but who are not under his orders: a change of this kind cannot, therefore, be summarily ordered, but must be made by mutual consent.

It would, of course, be easy to make the change in this country without waiting for the action of observers elsewhere; but this was thought inadvisable. It is a mistake, however, to suppose that the observers are really governed by local times. All observations are made at seven A.M., three P.M., eleven P.M., or other hours of Washington time, and have been so made ever since the establishment of the weather-service. Under Gen. Myers's management, it was thought that it would save confusion at the several stations if the observers kept their clocks at local times instead of Washington time, and observed at the proper corresponding times. This arrangement continues at the present day, though the observations are in reality all made on Washington time. Now, in view of the proposed change in the time of the international observation, it was thought inadvisable to make any change in existing arrangements until the whole change required could be made at one time. The chief signal-officer is in full accord with the reforms in standard time now being introduced, as he has shown in many ways; and he proposes to bring the whole work of the service into conformity with the new system as soon as this can be done without introducing confusion in the different departments of the service.

For more than three hundred years, access to the sacred city of Villa Rica, in Araucania,

has been prevented by the Indians. Its name indicates its importance and wealth in the days of Indian supremacy. Now it is a mere collection of ruins, overgrown with herbage and shrubbery; though the forms of antique monuments and buildings are still traceable, and invaluable for archeological study. Very recently, Chile has taken possession of the territory; and its treasures of antiquity are, or will soon be, accessible to ethnologists.

A SCHEME for conveying brine by pipes from the Cheshire salt-fields to the Mersey, for manufacture there, was started two years ago. The pumping-works are erected, but so far with no results. The scheme was floated on the London exchange; but no 'salt man' joined therein, the general opinion being, that in flowing through pipes for so long a distance the salt would cake, and the stopping-up and corrosion of the pipes would necessitate repairs sufficient to swallow up profits. This would apply to the western New York and Lehigh valley scheme.

It is to be hoped that the state weather-services, of which several are now established, will give attention to questions apart from the ordinary statistical side of meteorological observation, which at present takes so much of their time. Thunder-storms especially need detailed examination from many closely placed observers, such as the state services may possess; for these storms are commonly so small that they often slip, unobserved, through the necessarily coarse meshes of the general signal-service network of stations.

There are as yet, in this country, no observations — at least, none published — of duration or detail sufficient to determine how many hours before its arrival a thunder-storm can be foretold. The antecedent conditions, the area, the average and abnormal tracks, and the duration of these small storms, have yet to be carefully studied. The blowing of the winds about them is imperfectly known. There are no data for determining the relation of the fre-

quency and violence of lightning to the different parts of the storm-area, or for discovering its possible preference for one or another topographical or geological district when it 'strikes.' Some of these points have been studied in Europe, but much remains to be done even there. Indeed, there is no department of meteorology in which local and closely placed observers can attain an end so distinctly original, and so far out of reach of the government service, as in this; and ten years' observations from stations near one another, and numerous enough, would yield results of the greatest practical and theoretical interest.

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.*

Mr. Francis Galton's proposed 'family registers.'

MANY obliging letters reach me from America, offering family information for my use, of the kind described by my friend, Mr. Henry F. Osborn, in your issue No. 39, as that which I want.

The scheme there described is one that I circulated to gather opinions and to obtain guidance before determining its precise form. This is now done, and with your permission I will say a few words upon it.

The information wanted applies to so many different individuals in the same family group, and differs so much in minuteness, according to the degree of kinship, and it has to be arranged in so special a manner, that a copious explanatory description and numerous tables are requisite. There is no real complexity; nevertheless, I feel assured, that, without considerable guidance, endless mistakes will arise. Correspondents will send pages of useless matter; and, on the other hand, they will be silent about simple facts, the absence of which will seriously diminish the value of otherwise copious returns. I therefore found it necessary to prepare a book containing a full account and explanation of what was wanted, in order to exhibit the various hereditary tendencies that converge upon any given person, and containing at the same time all the necessary schedules. This I have done: it is in the press, and will be published about Christmas by Macmillan, and will be procurable in America.

As regards the prize scheme, I found it inadvisable to restrict it to medical men, and I have thrown it open to 'British subjects resident in the United Kingdom.' I could not extend it farther, owing to the extreme difficulty of verifying statements of facts alleged to have occurred abroad. My self-imposed task will be hard enough as it is. The conditions of the prizes are fully explained in a fly-leaf to the English edition.

Let me take this opportunity of saying a few words about another book to which my name is attached as editor, and which will appear at the same time. It is called the 'Life-history album,' and was prepared by a sub-committee, of which I was asked to be chairman, who acted by direction of the Collective investigation committee of the British medical

association. This book gives explanations and schedules for the registration of *personal* data as life advances, just as the *Record* gives for a comprehensive account once for all of *family* data; the details, however, being very different in the two books: they are much more medical in the 'Album.' It is believed by the Life-history sub-committee that the medical value to the possessor, of his own life-history up to date, would be considerable, and of great service to the children. They also feel, that, if these albums are commonly kept, it will be possible hereafter to obtain extracts of a great many of them for purely statistical purposes, which would be of high scientific value. The albums will contain a vast amount of information which is now left to perish, and the lack of which is a great hindrance to obtaining that complete and comprehensive knowledge of the family antecedents of numerous persons, which is at present the paramount desideratum to inquirers into heredity.

I shall be very grateful to any of your readers who may see my forthcoming 'Record of family faculties,' and may make themselves acquainted with what I want, who will send me information concerning their own families. But I cannot explain my wants with sufficient brevity either here or by letter, and must, perforce, refer those who care to know them to the book itself.

FRANCIS GALTON.

42 Rutland Gate, London, December, 1883.

The red sunsets.

I have recently noticed several articles upon the gorgeous sunsets lately seen in this country, and desire to put down a few notes on the same.

The red glare was so brilliant the evening of Nov. 27, that the fire-alarm was sounded in New Haven, Conn., calling out the engines. On the succeeding night the deep red glow was magnificent, appearing far above blocks in the busiest part of the city. Careful observation has shown the phenomenon very nearly as brilliant at sunrise as at sunset. The deep red has appeared the last of all the *colors* in the sky at sunset, and invariably the first in the morning. There has been, in addition to this, a grayish afterglow at night, and in the morning a slight effulgence betokening the rising sun. This afterglow, or effulgence, has made it possible to observe the sky directly at the region where the deep red had just appeared, or was soon to appear; and this invariably showed fine fleecy clouds at a great height, generally stratified horizontally, and extending with slightly increasing density to the south-west or south-east horizon. These light stratified cloud-appearances were visible, even though the sky appeared absolutely cloudless a few minutes before and after the effulgence. The stars the past month have shown, night after night, most extraordinary twinkling, and the air has been saturated with moisture. Again and again, with a high barometer and a perfectly clear sky, sometimes even with a cold north-west wind, I have been astonished to find the relative humidity a hundred per cent.

As to a probable explanation, the wildest theories have been advanced: meteors, cosmic dust, zodiacal light, comets, electricity, volcanic gases and ashes, etc., have each had their adherents. Of these, the last is the only one worthy of consideration. The recent (?) eruptions at Java, 11,000 miles distant, are advanced as a sufficient cause for the presence of the ashes.

That volcanic ashes may be carried great distances is well known. Loomis's 'Meteorology,' p. 77, gives an instance in which ashes were carried 700 miles to the north-east and 1,200 miles to the west of the volcano Coseguina. Notwithstanding this evidence, it