

interest from any points within the disturbed area, and especially from points near its limits; that is, southern Florida; central Mississippi, Arkansas, Missouri, and Iowa; south-eastern Minnesota and Wisconsin; central Michigan; southern portion of the province of Ontario; northern New York; southern Vermont and New Hampshire; and eastern Massachusetts; also from the western part of the Atlantic and northern part of the Gulf.

2. At what hour, minute, and second of standard time was it felt? When this can be accurately given, it is of the very greatest importance. Be particularly careful to state whether it is standard (railway) time or local time; whether the watch or clock was compared with some standard clock at a railway-station or elsewhere, how soon, what the error was, and whether you corrected your observation by this comparison or not.

3. How long did its perceptible motion continue?

4. Was it accompanied by any unusual noise? If so, describe it.

5. Was there more than one shock felt? If so, how many? Where several were felt, give accurately, or even roughly, the number, duration, and character of each, and the interval between them.

6. Which of the following measures of intensity would best describe what happened in your vicinity?—No. 1. Very light; noticed by a few persons; not generally felt. No. 2. Light; felt by the majority of persons; rattling of windows and crockery. No. 3. Moderate; sufficient to set suspended objects, chandeliers, etc., swinging, or to overthrow light objects. No. 4. Strong; sufficient to crack the plaster in houses or to throw down some bricks from chimneys. No. 5. Severe; overthrowing chimneys, and injuring the walls of houses.

7. Do you know of any other cause for what happened than an earthquake? Give also any further particulars of interest, stating whether they are from observation or hearsay: for instance, whether the shock seemed like a tremor or jar, or an undulatory movement; and whether it seemed to come horizontally or vertically; whether any idea of direction of shock was formed, and if people agreed in their idea as to such direction. Mention any unusual condition of the atmosphere; any strange effects on animals (it is often said that they will feel the first tremors of a shock some time before people notice it at all); character of damage to buildings; general direction in which walls, chimneys, etc., were overthrown. Springs, rivers, and wells are often noticeably affected by even slight shocks, and such facts are especially interesting. If a clock was stopped, give the time it

indicated, and some idea as to how fast or how slow it was, its position, the direction in which it was standing or facing, and the approximate weight and length of the pendulum. If a chandelier was noticed to swing decidedly, describe it and state direction of swing. If pictures swung, state direction of wall, and whether pictures on the wall at right angles to it were also put in motion. If doors were closed or opened, state the direction of the wall in which they were set. All such little facts, if only noticed, remembered, and recorded, are of great value.

At end of letter give name of the observer, if other than the writer. A moment's thought will show the impossibility of an immediate acknowledgment of every letter received, although each one will have its share in contributing to the value of the result, as it finally appears in the public press and the official publications of the survey.

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#### THE FRENCH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE French association for the advancement of science held its fifteenth annual meeting in Nancy, the 12th of August and the week following. Nancy, one of the frontier towns, near the German limit, is a very handsome and pleasant city. It is very prettily built, and contains old monuments of a striking effect. It is also a scientific and literary town, and many able *savants* or writers hold a position in the university. The meeting was a very successful one, in that a large number of members were present, and the papers submitted were numerous and satisfactory. The president was M. Friedel, the well-known chemist, the successor of Würtz in the Sorbonne, and one of his best and most affectionate pupils. In his address to the meeting the first day, he made it known that the Association scientifique, founded by Leverrier, is to be soon combined with the French association under the name of the latter. The greater part of M. Friedel's address was concerning recent progress in chemistry and mineralogy. After having recalled M. Moissan's successful experiment, by which fluor has been isolated for the first time, and M. Lecoq de Boisbaudran's interesting researches concerning two new metals, he spoke at length on the artificial synthesis of different compounds, such as those of feldspars and some precious stones. After M. Friedel's address, M. Collignon, the secretary-general, briefly recalled the principal points of the association's history for the past

year, alluding to the Grenoble meeting and the excursions made in the neighborhood, mentioning the names of deceased members: Bouquet, Bonley, Jamin, Robin, Dechambre, Courty, and others. M. A. Volland, mayor of Nancy, greeted the association with heartfelt words. M. E. Galante spoke on the financial state of the association, which is very satisfactory. The expenses are for the publication of the yearly volume recording the acts of the association and the different works submitted; many grants for scientific researches are also included.

Some interesting discussions have been held in the meetings of the different sections. One of the best took place in the agricultural section, and the topic was wheat-production. Many experimenters and able specialists took part in this discussion, such as Frederic Passy, Levasseur, Alglave, Dehérain, Grandeau, Raffalovich, etc. M. Dehérain spoke on the best manner of getting the most wheat at least cost price, which is, I think, the universal desideratum, applying not only to wheat, but to all that can be manufactured or grown. M. Dehérain said that the great objection to the use of a large amount of manure is the 'laying' which usually occurs. But the 'laying' can very well be avoided if some trouble is taken in selecting the wheat species. According to M. Dehérain's experiments, the Scotch red wheat, the Shirley, and the Browick are not subject to 'laying,' and the crop is a very fine one when manure is liberally used; 35 or 40 *quintaux* of wheat, and 60 or 80 of straw, sometimes bringing more than 500 francs per hectare. M. Porion has even been able, in the Pas-de-Calais, to obtain crops four times more abundant than the mean average of French crops. M. Sagnier spoke of Indian wheat, the hero of the day, but a very unwelcome one. It seems that India is growing wheat very successfully, and the increased extension of railways helps this production in a marked manner. In 1876, ten years ago, India had twelve thousand kilometres of railway, and one and a half million hectares planted with wheat. At present there are thirty thousand kilometres of the former, and twelve million hectares of the latter. In ten years the wheat-crop has increased eightfold: it has doubled in the last three years. But this cannot be all, and the wheat-crop must certainly become greater still. M. Sagnier believes it may certainly become double what it is at present, and four times as large as that of France at this time. M. Alglave agrees with M. Sagnier, because, he says, although the inhabitants of North India have taken to using wheat for their food, those of the south keep eating rice, which does not sell so easily; and all their wheat they willingly sell, in-

asmuch as rice-culture does not interfere with wheat. Rice requires a watery soil, which does not suit wheat; so that they will continue growing rice in the valleys, and wheat on the hillsides. At all events, the enormous extension of wheat-culture in India is a matter of no little anxiety to European agriculturists.

In the anthropological section, M. Cartailhac read a paper concerning primitive burial rites. In 1830 some Danish anthropologists, Bruzelius, Boye, and Hildebrand, believed that in many cases primitive men were accustomed to bury only the bones, after the flesh had disappeared. M. Cartailhac, following up this idea, remarked that in many savage countries the fact is quite true. In the Andaman Islands, for instance, as E. H. Man has recently noticed, the body is buried for a time only, then unearthed when the flesh has been decomposed; and a similar custom is met with in many instances. M. Cartailhac proves that this fact is also established in regard to primitive mankind, and that at the *age du Reune* — nothing being known of the burial rites of the stone age — the real burial was performed only when the body was deprived of flesh. In the Menton caves, for instance, the bodies were certainly buried in the skeleton state. The same is true of the *age de la pierre polie*. Upon the whole, M. Cartailhac believes that the custom of letting corpses putrefy before giving them a definitive burial has been a very prevalent one. It is curious enough to notice that in Spain no king is laid in his burial-ground before the death of his successor: the dead king remains in the *Putrido*, as it is called, till his successor comes to take his place.

In the medical section I notice no very interesting papers yet, that is, none of general interest. There have been no general meetings at this session, as there usually are, — none save the general assembly of the first day. Some interesting excursions have been made in the neighborhood. One had been projected to Mount Douon, a mountain on the German territory; but the German authorities, not knowing the nature of the French association, had asked that no excursion should be made: so it was deemed better to abandon the project. Only two or three persons went up, and found a small body of troops and some local German authorities. But it was ascertained that the intentions of the association had been entirely misunderstood, the German authorities knowing nothing of the association, and believing it to have political objects. The absurdity of the notion was ridiculed, and no more was thought about it.

The next meeting will take place in Toulouse, and the following one, for 1888, in Oran (Algeria).