social pleasures the gathering brings, this may fulfil its large opening promise of being a fruitful and happy season to us and to our association.

— Dr. E. Naumann, late director of the geological survey of Japan, has published an essay on the influence of the structure of the earth upon the phenomena of terrestrial magnetism. His researches in Japan show that the magnetical lines are to some extent influenced by the *fossa magna*, a great fault which crosses the islands in a direction south-east by north-west. By studying the direction of the magnetical lines in connection with the geological structure of other countries, the author comes to the conclusion, that, in the vicinity of faults and folds, the magnetical lines show remarkable irregularities, and that a connection exists between both phenomena. Recent researches by Ciro Christoni on the intensity of terrestrial magnetism in Italy (*Atti della R. Accademia dei Lincei*, 1887, p. 200) show irregularities of the magnetical elements in the eastern part of Venetia, on the western part of the coast of Liguria, and in Val Pelice. These places coincide with centres of seismical disturbances, and suggest a connection between geological and magnetical phenomena. It seems, however, that the available material is still too incomplete for a thorough study of the question at issue, the magnetical surveys not being of a sufficiently detailed character.

— Charles E. Putnam of Davenport, Io., died July 19.

— Those interested in Spiritualism will read with special interest Prof. Carvill Lewis's account of two sittings with the noted English medium, Englinton. This medium is such a tower of faith to believers, and has deceived so many, that so glaring an exposure of his methods as Professor Lewis gives is especially valuable. The article is published in the Proceedings of the English Society for Psychical Research, May, 1887.

— The readers of *Science* know from our notes on the exploration of Africa how rapidly one discovery follows another, and that it is difficult to keep a map up to date. This fact has induced J. Perthes to publish a second edition of his large map of Africa in ten sheets (1 : 4,000,000). The student of the geography of Africa will find this map, which contains an enormous amount of detail, and which is in every respect up to the date of publication, a valuable help in his researches. The routes of explorers, the tribes with whom they came into contact, and the character of the land they traversed, are shown in the map; deserts, steppes, and regions with tropical vegetation, including savannas and woods, being distinguished by different colors. An important feature of the map, and one necessary for the critical study of geography, is the distinction between countries which are really explored and those which are known by report only; the former being written with heavy letters, the latter with light ones. The new edition, of which two sheets — Kongo and Abyssinia — have been published, contains so much new material, that the section 'Kongo' is practically a new map. The results of the journeys of Kapello and Ivens, Reichard, von François, Kund and Tappenbeck, Wolf, Büttner, Grenfell, Junker, and the observations of Captain Rouvier, have been used in constructing this sheet. The important results of these journeys were published in our map of Central Africa some time ago. The observations of Chavanne and other visitors of the Lower Kongo induced the author, H. Habenicht, to include that region in the zone of steppes occupying south-west Africa. In Section 6, 'Abyssinia,' the routes of Cecchi and Chiarini have been made use of, and — what will be welcome to most readers — Emin Pacha's province, his stations, and those of the Kongo Free State, have been marked by separate colors. The political boundaries have been corrected according to recent treaties and annexations.

LETTERS TO THE EDITOR.

*** The attention of scientific men is called to the advantages of the correspondence columns of* SCIENCE *for placing promptly on record brief preliminary notices of their investigations. Twenty copies of the number containing his communication will be furnished free to any correspondent on request.*

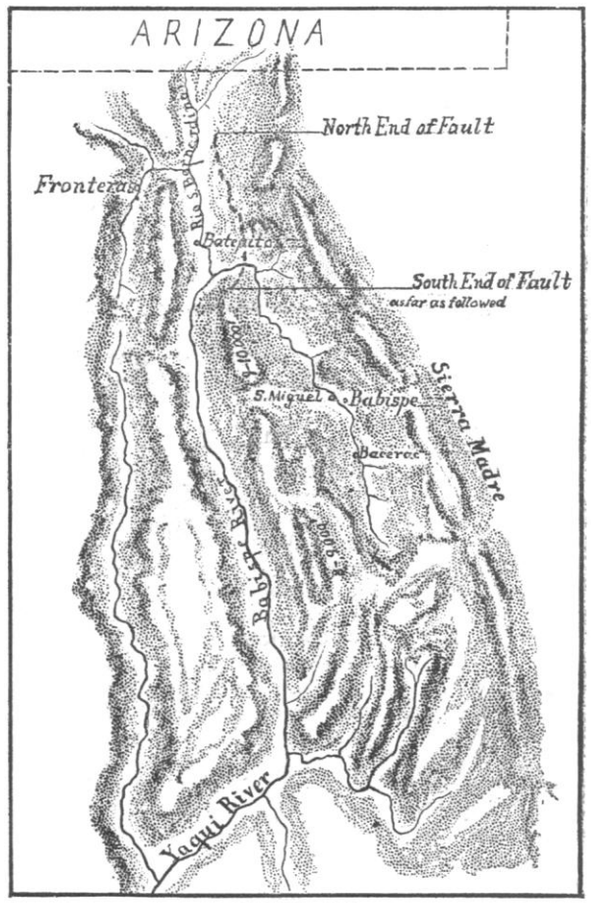
The editor will be glad to publish any queries consonant with the character of the journal.

Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

The Sonora Earthquake.

THE past month has been spent by me in Sonora, U.S. Mexico, in examining the scene of the greatest disturbances during the recent earthquake of May 3. This trip has required mountain-travel of about seven hundred miles, horseback and on foot; fully one-half, the latter. While it is impossible now to give the complete results of my explorations, a brief summary may prove interesting.

There is not now, nor has there been, lava eruption or crater volcano. I visited every locality in the Sierra Madres where such phenomena had been reported — fruitlessly. There is a grand fault extending along the eastern side of the San Bernardino and Yaqui River valleys for nearly one hundred miles. This fault has a general northerly and southerly strike, with a dip of from 45° to vertical; and the difference in level of the two sides is for fifty miles an average of eight feet. It lies close to the foot of the mountain-ranges, where the *mesa* drift joins the steeper part of the chain, until it crosses the Yaqui, where it goes directly into the mountains. There are numerous minor faults and fissures; and



HEIGHT IN FEET.

Fronteras, 3,350. Babispe, 3,025.
Batepito, 2,290. Bacerac, 3,150.

the entire valley of the San Bernardino is apparently sunk from two to four feet. The relative level is changed that much. This condition exists also on the Babispe River above and for some distance below Babispe, and on the Yaqui at and below its junction with the San Bernardino. Almost every water-course in the disturbed area has changed in the same way.

The town of Babispe was totally destroyed, forty-two lives lost out of a population of seven hundred. No other town in Sonora suffered much. Extensive evidence exists of irruption of water, sand, and fiery gases. As stated in my first letter, mountain-fires succeeded the first shock. These were caused by the ignited gases and falling bowlders. Time data in Mexico, away from the railways, are unprocurable, none existing. The general fact that the first shock took place May 3, about 3 P.M., and that it came from a westerly direction, is all that can be obtained.

It is much to be lamented that the ground was not thoroughly explored before the beginning of the rainy season, which set in on the 14th of June with a violence unknown since 1881. This will

cause the obliteration not alone of the extensive and interesting minor details of the disturbance, but of many of the greater as well, particularly in the river-beds where the changes of level have occurred. The town of San Miguel, three miles north of Babispe, and Bacerac, nine miles south, were uninjured. This is, in view of the principal line of disturbance. particularly interesting.

I enclose a hasty tracing of the section, which may aid in showing the location of the fault. This does not show the length, for it is too tortuous. Scale of map is about 40 miles to the inch. The mountains as marked are the famed Sierra Madres.

G. E. GOODFELLOW.

Tombstone, Arizona, July 14.

Chemical Laboratory of the University of Nebraska.

So many requests for the plans and a description of the new chemical laboratory of the University of Nebraska have been received since its erection, as to warrant the belief that a brief description of its general features would be of interest to the readers of *Science*, and especially to those who are contemplating the erection of similar buildings, or who are interested in the educational growth of the West.

The building is situated on the south-east corner of the university campus, fronting south on R Street. A wide street bounds the east side, while on the north and west is the open campus: thus the building commands an abundance of light from all directions.

Fig. 1 shows the south front and east side. The building consists of a high basement of native limestone, and a two-story superstructure of the finest St. Louis pressed brick, laid in black mortar and relieved by belt courses of rough limestone. The style of architecture is Romanesque, the broad and heavy stone arches and pointed towers giving to the whole an appearance of massiveness and solidity in keeping with its construction.

The entrances are in the south and north ends of the building; that in the south being the main one, while the north door is for the convenience of students coming to the laboratories from the other university buildings. Through this, access is had to every work-room in the laboratory, and to the main lecture-room on the second floor. This arrangement brings classes into the lecture-room from the rear, — an arrangement that will be appreciated by every lecturer on experimental science.

Entering at the south door, we find ourselves in the vestibule of the first floor. At our right and left, stairways lead to the basement floor, as shown in Fig. 3. Descending to the basement corridor (Fig. 2), at the front is a large vestibule opening by double side-doors into an area where heavy material is received. Under the stairway to our right is a small room containing the gas-meter. Under the left-hand stairway, and extending across the space occupied by the vestibule, is a ladies' toilet-room. Immediately in front of the stairway is the elevator shaft. The room at the right serves as a store-room for the basement laboratories, and as a balance-room for the assay and metallurgical laboratory. The corresponding room on the opposite side of the corridor contains a small upright boiler for furnishing distilled water, and large storage-tanks for hydrogen and oxygen gases. It serves also as a storage-room for acids and as a work-shop. The remaining portion of this floor is taken up by the general laboratory, where students beginning the study of chemistry do their work. This can be used as one large laboratory, accommodating seventy-five students at one time, or, by closing the communicating doors, be divided into two, A and B, A being used as an assay and metallurgical laboratory.

These rooms have high ceilings, and are well supplied with light. They are ventilated by means of the two large flues C and D, each of which is eight feet broad, and a series of smaller flues built into the side-walls, one between each pair of windows. The large

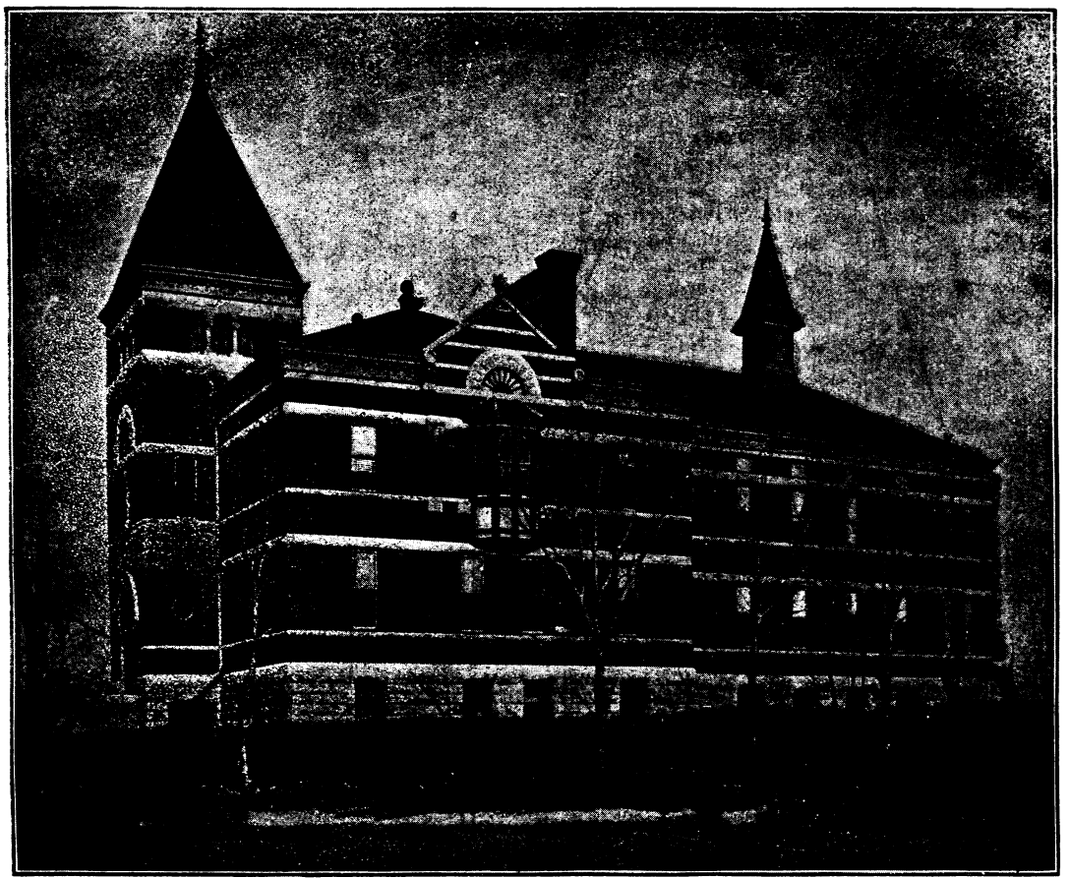


FIG. 1.