for the luminosity of the cloud. It could not have been due to reflected light coming from a city. It might be postulated that the cloud consisted of a mass of organic vapor that was slowly oxidizing, being in fact a case of an extended will-o'-the-wisp, but for several reasons this seems to be an unlikely hypothesis. At the time the cloud was observed, it was thought to be far too late in the evening for its light to be reflected sunlight. There is a possibility that a bright moon below the horizon might have been the source of the light, although I have no recollection of having seen the moon rise later.

JOHN ZELENY

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ENTOPTIC COLORS

I WAS extremely interested in reading the description of the phenomenon reported by Mr. Paul E. Klopsteg, which he observed in his neon tube experiments. I have observed for some considerable time what I believe to be the same thing, only obtaining it in a different manner. I am an amateur movie enthusiast, and from time to time in setting up my projector I have had occasion to run it without any film, with the light shining against a white screen and at varying speeds. I have noticed that at a certain speed which is somewhat less than the standard speed of 16 per second there is a very decided color phenomenon present. This effect is very difficult to describe, as it appears to be a mixture of flashes of the various colors mentioned by Mr. Klopsteg. I should say also that the frequency would probably be about 10 or 12 per second.

The first time the phenomenon was observed I was undecided as to whether there was a defect in my visual apparatus, but inasmuch as it can be produced at will I came to the conclusion that it was perfectly normal. If, as Mr. Klopsteg suggests, this phenomenon offers an opportunity for some original work, the thought is suggested to serve that my observation might prove of value, inasmuch as a different method of production is used. The illumination used is the regular incandescent lamp which gives a somewhat whiter light than the ordinary incandescent bulb and has a concentrated filament, but otherwise is quite standard.

ELMER F. WAY

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THE PREVENTION OF CONVULSIONS

IN connection with an item under *Science News* entitled "Sunshine and Cod Liver Oil for the Prevention of Convulsions," which appeared in SCIENCE, March 20, 1931, I wish to draw attention to the fact that in a series of experiments conducted at University College Farm, Dublin, on calcium metabolism in the pig, convulsions appeared in a group confined on a non-vitamin D diet, to a compartment lighted through window glass. Similar groups getting vitamin D did not develop convulsions. The experiments are described in a paper published in the *Journal of the Department of Agriculture,* Dublin, Vol. 30, No. 1, from which the following abstract giving a description of a convulsive fit in the pig is taken:

> A pig suddenly developed a tremor which rapidly intensified, the animal arching its back and progressing backwards until impeded by some obstacle. In some cases the pig squealed as if suffering from intense pain and after a lapse of three to five minutes it fell prostrate to recover gradually in from seven to ten minutes after the onset of the attack.

The group of pigs which developed convulsions exhibited all the symptoms of an intensified form of rickets.

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SOCIETIES AND MEETINGS

THE TEXAS ACADEMY OF SCIENCE

THE Texas Academy of Science held its annual meeting on November 27 and 28 at San Antonio, where it was the guest of the city and had its meetings in the Witte Memorial Museum through the kindness of Director Ellen S. Quillen. An extensive and varied program was given, which was divided into papers of like interest rather than into those representing any one of the sections of the academy. The section of the geology and its closely related sciences heard among other papers presented one on the "Silting of Lake Worth," by Dean T. U. Taylor, dean of engineering, University of Texas. Dr. E. H. Sellards, of the Bureau of Economic Geology, University of Texas, gave an account of the Texas earthquake, August 16, 1931. This is the first paper in which this earthquake, which was felt over much of Texas and adjacent states, has been reviewed. William Cunningham, of the department of chemical engineering, University of Texas, gave a full account of the sulphur industry of the Texas coast. This paper was perhaps the most enjoyed of any technical paper given at this meeting. From the standpoint of research into unknown fields the paper by Frederick A. Burt, of the Agricultural

and Mechanical College of Texas, on the "Formative Processes in Certain Aluminum Bearing Concretions" was noteworthy.

The section of biological sciences introduced some new speakers, who presented papers dealing with the subject of "Teaching of Natural Sciences in the Public Schools." The most unique of these papers was the one by Dr. Don O. Baird, of State Teachers College, Huntsville, Texas, on "Birds that Go to School." Charles H. Gable and Ellen S. Quillen, of San Antonio, the authors of a series of "Nature Readers for Public Schools," presented a very interesting discussion of the "Place of Natures Study in Child Education." Dr. W. R. Horlacher and D. T. Killough discussed what may be done in improving the cotton plant in a paper entitled "Chlorophyll Deficiencies Induced in Cotton (*Gossypium hirsutum*) by Radiations." These and a number of other technical papers along the lines of biology made a full day's program.

After the annual dinner, which took place at the St. Anthony Hotel, the section of anthropological sciences gave their program. J. E. Pearce, head of the department of anthropology of the University of Texas, gave an account of the work done by his department during the past year. He told of the bringing to light or of "Finding a Civilization which Once Existed in East Texas and Hitherto Unsuspected by the Archeologists." He illustrated his talk by a large number of earthenware vessels recovered from village-sites, caches and burial places. This pottery is on a par with anything yet discovered in North America and is found in such numbers as to indicate a large population with fixed dwelling places. Another unique find was a peculiar form of arrow-heads, which are always associated with burials. So far as known, this type of arrow-head has not been observed before in the United States. Judging from the published accounts of similar work this find is the outstanding one for the past ten years. Miss Emma Gutzeit, secretary of the Museum Association of San Antonio, gave an interesting illustrated account of four expeditions sent from the museum into the Big Bend Country in search of specimens and information concerning the aboriginal inhabitants of that part of Texas. The pictures shown of pictographs and petroglyphs gave the audience some idea of the kind of records left by the civilizations which have preceded our own. Colonel M. L. Crimmins, curator of anthropology of the Witte Museum, took up the story of early West Texas and told of the migration of the Aztec people from Casa Grande, a now deserted town seventy miles southwest of El Paso, through a mountainous country of Northern Mexico and ending with the arrival of the Aztec people at the City of Mexico. His story was illustrated by copy of a chart made two centuries ago in Mexico and now preserved in Spain. He stated the Aztec people much resembled the Romans and showed how they had left their imprint on the other primitive people with whom they came in contact.

The final session was held on Saturday morning. The papers given were of a general nature. Miss Kethora Remy, of San Antonio, in a paper entitled "The Mineral Content of Honey" gave a summary of a year's investigation to ascertain if there was a relationship between the amounts of minerals contained in honey and other food value. After these papers the regular business meeting completed the program. The reports of officers and committee men showed a fine growth in membership and that the academy was in good financial condition. Ten fellows and a large number of new members were welcomed into the academy. It was ordered that a year book containing the outstanding papers presented at this meeting be printed as soon as possible and that the mimeographed monthly bulletin be continued. The officers for the ensuing year are:

Dr. H. Y. Benedict, University of Texas, *President.*

F. B. Plummer, University of Texas, *assistant to the president.*

W. E. Carter, A. and M. College, *vice-president, section 1.*

E. N. Jones, Baylor University, *vice-president, section 2.*

J. F. Sinclair, Texas College of Arts and Industries, *vice-president, section 3.*

H. B. Parks, Agricultural Experiment Stations, *secretary-treasurer.*

At the conclusion of the annual meeting the executive committee met and decided to hold the summer meeting at Austin, probably the first week in June. The time and place for the annual meeting for 1932 was not decided upon.

H. B. PARKS, *Secretary*

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A SIMPLE SUSPENDED MIRROR SEISMOGRAPH

DURING the last year of a very interesting and somewhat unusual seismograph was developed and used by two of the graduate students under the writer's supervision. Because of the extreme simplicity and high sensitivity of the apparatus, and in view of the rapidly growing interest in seismology a brief description of the instrument may be of interest.

It consists essentially of a light mirror about 3 mm