part of the nose. The damaged area also fluoresced the same blue, though the intensity was less pronounced.

From these observations it appears necessary to revise the existing concept of the fluorescence of scar tissue as it pertains to the etiologic factor.

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Interesting Observations in Dissections of the Frog

Medical men occasionally amaze the readers of newspapers and journals with reports of interesting anomalies of human anatomy. Students of general zoology are no less amazed to find that Mother Nature sometimes plays havoc with the internal anatomy of some of her lesser creatures.

In 18 years of directing laboratory dissections of the frog, numerous anatomical anomalies have been called to my attention by puzzled students. One of the most interesting cases was the Anuran specimen upon whom the students bestowed the curious name, "Glass-sides." Apparently, in the course of embryological development, the tissues normally laid down to form the laminated muscles, the obliquus externus and internus, had failed to develop. As a result, the internal organs were clearly visible through a thin sheet of mesentery-like tissue, occupying the normal position of the muscle, extending from the dorsal fascia to the linea alba. The animal had developed to normal size at maturity, and although the intestines were held in by little more than the skin, no ruptures had occurred.

Anomalies of the genital system are not common, but in one male specimen the right testis was lacking. In this same animal the position of the stomach was reversed from left to right.

In the above-mentioned anomalies and in numerous other cases of missing or misplaced organs the animals had developed to normal size and were not apparently affected by these defects.

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The Plainview, Texas, Fossil Bison Quarry

A fossil bison quarry at Plainview, in Hale County, Texas, discovered in 1944, was excavated during 1945 by the Bureau of Economic Geology of the University of Texas and the Texas Memorial Museum. The quarry yielded skeletons, in varying degrees of completeness, of between 50 and 100 bison of an extinct species appreciably larger than the modern buffalo. The bison skeletons were found in the filled valley of a stream at a depth of 12 feet. The unusual accumulation of skeletons may have resulted from a bison stampede. With the bison were found 19 projectile points and 8 other artifacts, chiefly or entirely scrapers. The projectile points, while resembling the known Folsom and Yuma points used by prehistoric hunters, are distinctive and have been named Plainview points (*Geol. Soc. Amer. Bull.*, 56, 1196).

Bison material to the amount of about three tons, as packed for shipment, was removed from the quarry. Included were eight blocks of bones showing the full thickness of the bone bed. Two of these blocks, containing artifacts in place among the bones, will be placed on exhibit in the Texas Memorial Museum at Austin. With this new material the Memorial Museum will have exhibits of "Early Man" and associated fossils from four Texas localities: Malakoff, Henderson County; Cowan Ranch, Roberts County; Berclair terrace of Blanco Creek, Bee County; and Plainview, Hale County.

The only vertebrate fossil found immediately with the bison bones at Plainview is a large wolf, although the same deposits, near by, here yielded the Columbian elephant, *Parelephas columbi*, and a fossil horse, *Equus sp.* as well as an additional artifact, a scraper. Only fragmentary remains have been recovered of the wolf, and the species has not been determined. It is apparently smaller than the great wolf, *Aenocyon ayersi*, found with human materials at the Bee County locality and at Vero Beach, Florida (*Science*, 1916, 44, 615). The Columbian elephant has been found near, or in association with, human relics at all of the localities here mentioned.

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On "The Rumbling of Thunder"

In a recent article by Samuel R. Cook (*Science*, 1946, 103, 26–27) a "new cause" for the rumbling of thunder is described. He states that he believes this "new cause" to be "more potent" than any of the four causes usually named. This letter is not to dispute either the existence or potence of the new cause, but to raise some further possible questions concerning it.

In the first place, if we assume Mr. Cook's cause to to be the only cause of rumbling, we would logically expect an even distribution of rumblings with the loud clap and diminuendo and those with a crescendo followed by a loud clap. We should also expect many in-between rumblings. This writer has not observed these phenomena in this locality.

In the second place, assuming the arrangement of electrons in the discharge as described (N, 2N, 4N, 8N, . . .), we wonder about the distances between the points where these charges occur. Let us fix the number of electrons at the second cloud as 2^kN. Then, from the loudness of the clap and the rapid diminuendo, must we assume that the distance between the points of 2^kN electrons and $2^{(k-1)}$N electrons is much shorter than that between the points for N and 2N electrons? Or are we to assume that the distances are random and that this can account for the fluctuations in the loudness of the rumbling?

Finally, the time of continuation of the rumbling needs some consideration. Let us assume two cumulus clouds 6,000 feet up and two miles apart, with the second cloud immediately over the observer—an extreme condition. Then the clap should be heard 5 to 6 seconds after the flash is seen, and the rumbling, if all is audible, for 11 to 12 seconds. But considering the

weakness of the original discharges, the distance covered, absorption in the atmosphere, how much of it will be audible?

Just what relationship exists among these five factors in the rumbling of thunder, if this relationship can be determined definitely, should prove most interesting.

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A New and Effective Hemostatic Agent

Local agents for the control of bleeding have fallen within three groups: (1) physical, such as pressure; (2) protein precipitating, such as Monsel's solution or tannic acid; (3) coagulation accelerators, such as fibrinogen or thromboplastin. Alginic acid derived from marine kelp may be added to the latter group.

When seaweed is broken or damaged in the water, the injury is healed by the plant juices coming into contact with the calcium ion of the sea water. While the alginic acid may be a transitional product in the synthesis of the carbohydrate of the plant, it also acts as a protective colloid and guards the plant against injury. This clotting and healing action may be likened to that of glycoproteins in the animal and the gums of land plants such as cherry, peach, and acacia.

Alginic acid prepared as a powder and applied to bleeding points combines with the calcium and immediately forms a coagulum that seals the wound. The styptic action is prompt, and new tissue is formed. It has been suggested that the nonirritating character of the coagulum is due to a detoxifying property characteristic of acids derived from kindred carbohydrates such as glucuronic acid.

Alginic acid has been used on a series of 100 cases of extraction and minor oral surgery of the mouth. In no case has there been untoward reaction; healing has been unusually prompt and the control of bleeding an added comfort to both patient and operator.

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Actualités Medico-chirurgicales

At this time, when scientists in formerly occupied countries find great difficulty in bringing themselves up to date on advances that have occurred during the war, it seems appropriate to mention one program designed to this end which has already been under way for some months. Due to the initiative of Prof. E. J. Bigwood, of the University of Brussels, who came to this country during the war, a series of pamphlets, *Actualités medico-chirurgicales*, have been printed here in the French language and are being circulated in Belgium under the joint sponsorship of the Belgian-American Foundation in New York and the Fondation Franqui of Brussels. The authors have been principally American, and the translation has been made by Belgian scientists in this country. Both authors and translators have donated their services. Pamphlets on blood transfusion, penicillin, sulphonamides, protein metabolism, parenteral feeding, viruses, chemotherapy, and pyrogens have already been printed, while others on burns, tuberculosis, DDT, neurology, cancer, virus diseases, and infant psychology are scheduled to appear in the near future. The pamphlets are designed to provide brief surveys to orient the readers to the new developments in a general way, or as a starting point for those who may need to go further into the literature. The pamphlets have been very well received in Belgium, and a limited number have been sent to other countries.

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Note on the "Purple" Test for Alloxan

In studying further the "purple" test for alloxan previously described (*Science*, 1945, 101, 536; *Arch. Biochem.*, 1945, 8, 1), we have come to recognize that if iron is present in the solution tested, it may constitute an interfering factor since it gives rise to an evanescent violet color.

The test, as applied to alloxan, consists in reduction by means of cysteine hydrochloride or ascorbic acid, followed by the addition of barium hydroxide to slight alkalinity; a purple color or purple precipitate is then formed. E. Baumann (*Z. physiol. Chem.*, 1883–84, 8, 299) discovered that an aqueous solution of cysteine gives a blue color with ferric chloride, and V. Arnold (*Z. physiol. Chem.*, 1910–11, 70, 314) observed that, on making alkaline, this blue changes to a violet which quickly fades but reappears on shaking. Ascorbic acid also gives a violet color under these conditions (R. W. Herbert, *et al. J. chem. Soc.*, 1933, 1270).

Hence, the test is likely to lead to erroneous conclusions if applied to extracts containing iron.

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The Record and the Metric System

Under "Scanning Science" (*Science*, 1946, 103, 446) I notice that a few dates have been omitted. At least two of them are of major importance. In 1866 Congress passed a bill making the metric system lawful in the United States. In the same year Congress directed the Treasury to furnish to each state a set of standard weights and measures of the metric system. In 1893 the Treasury issued an order recognizing the meter and kilogram as fundamental standards and that the customary units will be derived from them.

As to coinage, in 1866 Congress fixed the weights of the 5-cent piece at 5 grams. In 1873 Congress fixed the weights of other coins as follows: half dollar, 12.5 grams; quarter dollar, 6.25 grams; and the dime, 2.5 grams.

In the "Scanning Science" mentioned, the omission of the above facts may give unwarranted comfort to opponents of the metric system.

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