Organisms of this type are widely distributed and occur commonly on vegetables, and their presence on shelled peas is to be expected. Since they are not spore formers, it is noteworthy that they withstand a temperature of 15° F. for over 2 years. While no peas stored at minus 5° F. for more than a month have to date been analyzed, the lactobacilli in all probability would persist at this temperature, for experience has shown that micro-organisms generally tolerate zero Fahrenheit as well as or better than higher freezing temperatures.

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VITAMIN A IN THE PIMIENTO PEPPER

THE pimiento pepper is utilized in the culinary art chiefly as a condiment. This rather limited use in the diet may perhaps be an explanation for the relative paucity of research concerning its food value.

MacLeod and Booher[1] report that the vitamin C content of the canned product is equivalent to that of fresh grapefruit, and analyses have determined its chemical composition.[2] Capsanthin, or an allied pigment so masks any other color present in the pepper that it seems expedient at this time to call attention to its high carotene content.

In the biological study the Sherman technique was followed. Rats varying from 40 to 50 grams at weaning were put upon his vitamin A-free diet until symptoms of depletion were manifest, *i.e.*, signs of ophthalmia and stationary or slightly declining weight. Fresh, commercially canned and dried pepper were each then fed upon three different levels with an average of eighteen animals in the several groups.

This preliminary investigation has shown that, computed upon the dry basis, four milligrams of pepper induced a growth response above that of the Sherman unit. Further, a chemical assay has indicated from 200 to 300 mg of carotene per kilogram of the dried material. Work is in progress to establish the unit level for the pimiento pepper and to ascertain its carotene value.

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EARTHQUAKES IN THE HOLY LAND: A CORRECTION

IN an article on earthquakes in the Holy Land[1] there is given a list of 207 shocks, of which there is record, between the years 1606 B. C. and 1927 A. D. Among these are 27 dates from an Arabian authority, As-Soyuti, whose work appears in translation in the *Journal of the Asiatic Society of Bengal.* In transcribing these dates I failed to observe that they were stated as A. H., *i.e., Anno Hejira,* instead of *Anno Domini.* They are, therefore, as quoted in my list something over six centuries too early. The corrected dates are as follows:

A.H.	A.D.	A.H.	A.D.	A.H.	A.D.
94	712	434	1042	552	1157
98	716	455	1063	565	1169
130	747	460	1067	575	1179
220	835	462	1069	578	1182
233	847	479	1086	597	1200
242	856	484	1091	600	1203
245	859	532	1137	702	1302
393	1002	538	1143	791	1388
425	1033	551	1156	889	1484

Inasmuch as the Hejira dates from July, 622 A. D., and there are adjustments of the calendar dates for fractions, these figures may be off one year. It is also probable that the original dates are approximate. Hence where As-Soyuti differs by a year from others given in the list as published, one shock only is presumably meant.

In this connection I would call attention to a very ancient, yet definite observation regarding the now well-known earthquake fault that traverses the eastern slope of the Mount of Olives:

> And His feet shall stand upon the Mount of Olives which in that day is before Jerusalem on the east; and the Mount of Olives shall be cleft in the midst thereof toward the east and toward the west, and there shall be a very great valley; and half of the mountain shall remove toward the north and half of it toward the south.[2]

Activity on this fault was the occasion of destructive tremors in 1927. That it was the scene of more obvious displacement some 2,500 years earlier we can not doubt in view of the graphic description of the Old Testament writer, although his identity and the exact date of his prophecy are matters of uncertainty, especially with reference to this particular passage.

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A RARE PUBLICATION

THE library of the Academy of Natural Sciences of Philadelphia recently acquired from a dealer in second-hand books a copy of Volume 1, 1892–94 (1895) of the Transactions of the Natural History Society of Queensland. The fact that this is not listed in the Union List of Serials and that the natural

[1] Grace MacLeod and Lela Booher, "The Antiscorbutic Vitamin Content of Some Preserved Foods," *Jour. Home Econ.*, 22: 588. 1930.

[2] J. G. Woodroof and J. E. Bailey, "Pimiento Peppers," *Ga. Exp. Sta. Bull.*, 150. 1929.

[1] *Bull. Seismol. Soc. Amer.*, Vol 18, 1928.

[2] The Old Testament, Zechariah, 14, 4–6, 520 B. C.

history library of the British Museum and that of the Linnean Society of London, when their library catalogues were issued a few years back did not have this volume, would indicate that this is a rare work. The library of the Zoological Society of London lists the work in its catalogue, although the new species described in the "Transactions" are not noted in the *Zoological Record*. There are but two articles of taxonomic interest in the volume, one by C. J. Wild, describing *Dendroceros subtropicus*, a new species of moss (pp. 49–50); and "Australian Lepidoptera: Thirty New Species," by Thomas P. Lucas, entirely moths (pp. 101–116).

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

DOUBLE STAINING BY THE CAJAL-BROŽEK METHOD

WHEN making durable microscopic slides, many different ways of dyeing are in use, of which some are of chief importance in cytological work. But the double staining is such that only quite definite parts of the cells, *e.g.*, chromosomes or nucleoles are stained by one color; whereas the other color stains another part, *e.g.*, cytoplasm. The method, which the author of this account wishes to describe briefly, has been worked out with a few alterations, by Ramon y Cajal. It has been used from time to time and still is used in zoological work, but only for the last three years in botanical studies, where it has been introduced by Professor Arthur Brožek with considerable success, in a modified form.

It is a cytological method, which stains the chromosomes splendidly, and when compared with Heidenhain's iron-hematoxylin method, so much used nowadays, has certain advantages, which will be pointed out below. By our method, the chromosomes are stained a bright red with magenta—which is basic fuchsin, while the nucleole and the other parts are stained sky-blue with picro-indigo-carmine. Picro-indigo-carmine is a mixture of 2 parts saturated aqueous solution of indigo-carmine and one part of picric acid. Both the magenta and picro-indigo-carmine are used in concentrated solutions.

The process of staining is quite simple and short. The preparation—paraffin sections mounted on supporting glass—is freed from paraffin by xylol and brought through a mixture of alcohol-xylol and then through a series of alcohol baths to water; after which the object is placed for 3 to 5 minutes in concentrated magenta. The exact time must be found out for various objects, although the preparation always appears quite right, if treated for the length of time mentioned above. At the expiration of this time, the object is rinsed in distilled water and immediately placed in picro-indigo-carmine, where it is left for 10 to 15 minutes. It is better to find out the precise time for various objects by experiment. Then the object is placed in very slightly acid water for about one minute, into a beaker of distilled water with 1 to 2 minims acetic acid, after which an automatic differentiation is made with 80 per cent. alcohol. The slip is simply rinsed from the acid water, allowed to drain and plunged directly into 80 per cent. alcohol, where it remains until the red stain from the section remains, which can easily be seen with the naked eye. The time for differentiation is one half to one minute. Then the object is brought into 96 per cent. alcohol, 100 per cent. alcohol and a mixture of alcohol-xylol to xylol, and then mounted in Canada balsam. The whole process, from the placing in xylol to the mounting in Canada balsam, does not last more than 40 to 45 minutes. This is a great advantage when compared with Heidenhain's method, in which the procedure in the best case lasts for eight hours, and with careful working may even last for two and a half days. Another advantage is that the chromosomes stained with magenta can be distinguished from one another, even when they lie close to each other, or actually on each other. Such a method with hematoxylin is quite impossible on account of the covering color. A certain disadvantage of the method is that it can only be used successfully after sufficient acid fixing. It is best to use Nawashin's method, which is at the same time the most perfect, after fixing—15 parts 1 per cent. chromic acid, four parts formol and 1.5 parts glacial acetic acid. This method has been tried with success after fixing in highly diluted HNO_3. After using Němec fixing solution I., color tends to disappear—100 ccm 1 per cent. chromic acid and 8 ccm formol—but no change is apparent after using Němec II—50 ccm 1 per cent. chromic acid, 50 ccm 3 per cent. bichromate of potash, and 8 ccm formol; or after Regaud's method—80 parts 3 per cent. bichromate of potash and 20 parts formol. It proceeds badly after alcohol or formol fixing, but quite well after sublimate with acetic acid. There is no need to mention other fixing methods, which are for the greater part special. It is important that our method works excellently after Nawashin's fixing, which is most used to-day in plant-cytology. This method can be recommended, as it furnishes beautiful slides in a relatively short time,