

THE NEWS RECORD

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SATURDAY, MARCH 20, 1909.

The Causes of Earthquakes.

Theories and Facts Bearing on the Recent Remarkable Phenomena in Italy—The Continuance of Shocks in That Country.

Poor Italy! The troubles of that classic land consist not alone in the fact that the tremors of Mother Earth have already done great damage in the southern portion of the kingdom, but in the circumstance also that the shocks continue and seem to be affecting a wider extent of territory. What does nature intend to do with this fair land, so famous in history and so blessed in many respects by Providence? With all its natural attractions it would be a dangerous place to dwell if the fate of Messina or Pompeii were constantly impending.

Inhabitants of Rome, Naples, Florence and Milan are becoming alarmed now because of the frequency of slight shocks in their vicinity and the seeming increase in their severity.

Geologists think that the relief which the first shock gives to the internal stresses that caused it may not be complete and that further adjustments of the rock strata may be necessary to restore equilibrium. In the present case the only serious harm done was wrought at the outset, since the shock of Dec. 28 little life has been lost, and such walls as have been affected were tottering before.

The old theory that the interior of the earth is a fluid mass has few exponents now. Though calculation indicates that at a depth of twenty or thirty miles the heat must be so intense that it would, if exerted at the surface, melt the hardest known substances, a counteracting influence is certainly at work. Laboratory experiments prove that pressure raises the temperature at which any material will soften. So stupendous is the pressure exerted on the interior of the earth by twenty or thirty miles of rock above it that in



WATER FRONT OF MESSINA AFTER EARTHQUAKE.

the judgment of eminent astronomers—Professor George H. Darwin of Cambridge is one—the globe has the rigidity and far more than the hardness of the hardest steel. The late Lord Kelvin, the foremost physicist of the world during the latter part of his career, also entertained this opinion.

Italy is not the only country which is getting a severe shaking nowadays.

Ever since the earthquake shocks began in southern Italy, on Dec. 28, the seismograph at the weather bureau in Washington and the magnetograph, belonging to the same service, at Mount Weather, Va., have been cutting up strange pranks, and the earth seems to be still quaking. The seismograph is the official recorder of earthquake shocks and writes its story with a stylus on black paper. The magnetograph photographs its records on sensitive sheets, each variation of the magnetic field being indicated instantly by a point of light darted on the paper from a mirror. The latter instrument recorded the Italian disaster at the instant of its occurrence, while the seismograph began making its strange tremulous writing nearly ten minutes after the forces of nature had wrought their havoc.

"It is impossible to tell just what magnetic disturbance took place in Italy, but that it was a convulsion of the magnetic field of some sort is shown by the fact that the quake was instantly recorded on the magnetograph," said Professor Charles F. Marvin, chief of the instrument division of the weather bureau. "Since the evening of the 27th, corresponding to early morning of the 28th in Italy, when we got the first records of the preliminary quakes, our instruments have been pretty busy."

Professor Marvin added that every few days shocks of greater or less severity had been recorded, many of them affecting our own continent. According to the records, it took the earthquake waves or propagations six minutes and fifty seconds to travel from San Francisco to Washington.

The photograph reproduced here with showing the appearance of the water front of Messina after the earthquake was one of the first sent to this country and was taken shortly after the terrible disaster occurred. It indicates how the splendid and substantial stone buildings that faced the quay in a long semicircle were shaken down or irretrievably shattered by the force of the convulsion.

For dyspepsia, indigestion and loss of appetite take Levy's Oregon Grape Compound, sold and guaranteed by Burnaugh & Mayfield, Enterprise, Oregon.

Information Concerning Eighth Grade Final Examinations.

I. Dates: Three examinations annually. Each county superintendent to select months for his county.

- (a) January 21-22, 1909.
- (b) May 13-14, 1909.
- (c) June 10-11, 1909.
- (d) September 2-3, 1909.

2. Program: (a) Thursdays—Arithmetic, Writing, History, and Civil Government.

(b) Fridays—Grammar, Physiology, Geography, and Spelling.

3. Sources of Questions: (a) Civil Government—United States Constitution.

(b) Geography—State Course of Study; Redway and Hinman's Natural School Geography.

(c) History—List of topics from History Outline in State Course of Study and Current Events.

(d) Language—Buehler's Modern English Grammar, no diagramming.

(e) Reading—The teacher will send to the County Superintendent the applicant's class standing in reading, which shall be taken by such superintendent as the applicant's standing on the subject.

(f) Spelling—Eighty per cent from Read's Word Lessons, and twenty per cent, from manuscript in Language.

(g) Writing—Specimens of penmanship as indicated in copied matter and from manuscript in Language.

Smoke the Advertiser, best five-cent cigar. Home made.

Home Course In Modern Agriculture

VI.—How Plants Are Propagated

By C. V. GREGORY,

Agricultural Division, Iowa State College

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In order to continue to raise crops from year to year we must propagate the plants in some way.

There are two principal ways of doing this—by seeds and by divisions of the plant itself. The most important of these is by seeds, as it is in this way that most of the ordinary farm crops are multiplied.

In order to understand this process we must first learn how the seeds are formed. The tassel of the corn is the male flower and the silk the female. Some plants, such as certain varieties of strawberries, have only female flowers and must be planted in alternate rows with varieties which have both kinds of blossoms. In other plants the male and female flowers are combined in one. This is the case with the apple and many other fruits.

In the apple the stamens, or male parts, grow in a ring around the pistil, or female part, which is in the center of the flower. The top of a stamen, which is expanded, is called the anther. This contains a yellow dust, the pollen.

The upper portion of the pistil is called the stigma. From it a tube called the style leads downward to the ovary. This ovary contains one or more egg shaped cells called ovules. Each of these ovules is capable of developing into a seed if fertilized with a pollen grain. When a grain of pollen alights on a ripe stigma it is held by a sticky substance secreted there. It soon germinates and sends a long, threadlike projection down through the style to the ovary. This slender projection enters the ovary, and the resultant union of the male and female elements causes a seed to develop. One pollen grain is required for each ovule, and each ovule develops into a separate seed. There are many thousand pollen grains produced by each stamen, and as there are several stamens for each pistil you will see that a great excess of pollen is produced. This is one of nature's methods of making reproduction more certain.

In flowers like the apple the pollen may sometimes fall directly on the stigma in the same flower. More often, however, the stamens and pistils ripen at different times. The object of this is to prevent self fertilization, which, if long continued, will weaken the vitality of the coming generations. Cross pollination—that is, the fertilization of the ovule of one flower by the pollen from another plant—unites the strength of both parents and produces larger, harder seed.

This has been proved by many experiments. If the tassels are pulled from a row of corn before they have time to shed their pollen, the silks must necessarily be fertilized by pollen from other stalks. The cross pollination will cause the detasseled rows to produce heavier and larger ears. If this process is continued from year to year the yielding power of that particular strain will be considerably increased.

In such plants as corn the wind carries the pollen for rods in every direction. The air in the cornfield is so filled with the yellow dust that there is seldom any danger that the silks will fail to catch more than plenty to fertilize each of the many ovules that are to form the future kernels.

Some plants, however, are not so fortunate in this respect. The pollen of fruit trees is carried to some extent by the wind, but not nearly so much so as that of corn. In such plants as

or rake, but before you build a fire over them stop to think whether you want a crop of clover seed or not.

Some beekeepers are developing strains of honeybees with exceptionally long tongues. Some of these are able to obtain honey from second crop red clover, which has smaller blossoms than the first crop. When these strains of bees become a little better developed and more widely distributed the usefulness of the bumblebee will be over.

In the case of small grain cross fertilization is impossible, since the flower is inside of a closed hull. Two varieties of wheat may be planted in adjoining fields or even in the same field without the slightest danger of mixing. Varieties of corn, on the other hand, often mix when as much as forty rods apart.

The selection of seed corn will be taken up in the next article. The best

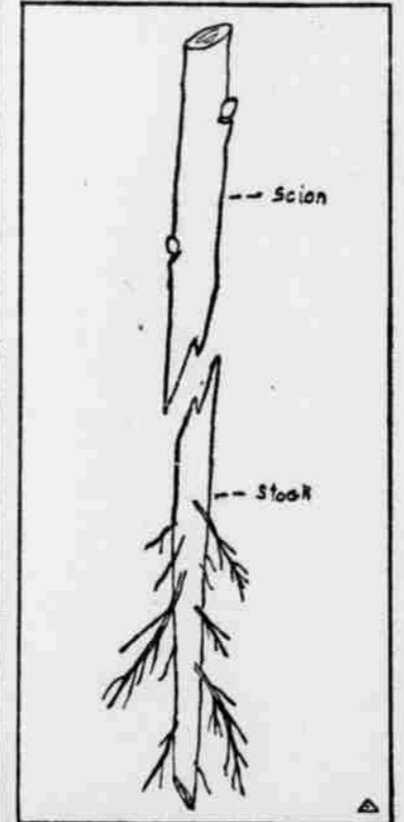


FIG. XIII.—THE STOCK AND SCION READY TO BE UNITED.

method of selecting small grain is by means of the fanning mill. By running through three or four times as much seed as is needed all the small grains may be sieved out and the light ones blown over, leaving only the heaviest, strongest ones for planting.

Grain that is intended for seed should be stored carefully in order that it may go through the winter uninjured. The chief enemies of stored seed are moisture, insects and rats and mice. The seed should be dry when stored and kept where moisture cannot gain access to it. Dry seed will stand almost any amount of freezing without injury.

There are a number of insects that damage seed grain by burrowing into the germ. If the seed room is tight, they may be killed by fumigating with carbon disulphide used at the rate of a pound to each thousand cubic feet of space. Place this in an open dish on top of the seed, close the room as tightly as possible, and in a few hours the insects will be exterminated. Care should be taken not to go near the room with a light, as the gas is explosive. This same treatment is also fatal to rats and mice, unless they have some way of escaping from the room. If possible the seed room should be so well built that these pests cannot get into it.

The second method of plant propagation is by division—that is, by planting parts of the plant itself. Potatoes are propagated in this way almost entirely. If small willow and poplar branches are stuck into the ground, they will grow into trees. Apple and other fruit trees are propagated either by grafting or budding. Apple trees may be raised from seed, but the fruit of seedling trees is usually worthless. By taking a part of the tree and growing another from it, it will, of course, bear the same kind of fruit.

Grafting consists of joining pieces of small branches or scions of the tree which is to be propagated to pieces of roots or stocks. The roots of yearling seedlings are used for stocks. The scions, which should be about the size of a lead pencil, should be cut in the fall and packed in sand. The grafting can be done at any time during the winter. All that is necessary is to cut the lower end of the scion and the upper end of the stock at an angle, as shown in Fig. 13. These are then carefully fitted together and tied with a little common string. The essential point is to be sure to have the cambium layer of the scion join that of the stock. This cambium layer is the thin, light brown portion between the bark and the wood. It is the point where growth takes place.

The completed graft, which should be eight to ten inches long, is again packed in sand. In the spring the grafts are planted in a row in the garden and left until they are two or three years old, when they may be transplanted to their permanent place in the orchard.

Stiff Neck.
Stiff neck is caused by the rheumatism of the muscles of the neck. It is usually confined to the back of the neck and one side. While it is often quite painful, quick relief may be had by applying Chamberlain's Liniment. Not one case of rheumatism in ten requires internal treatment. When there is no fever and no swelling as in muscular and chronic rheumatism, Chamberlain's Liniment will accomplish more than any internal treatment. For sale by Burnaugh & Mayfield.

NOTICE FOR PUBLICATION.
Department of the Interior.
U. S. Land Office at La Grande, Oregon, February 15, 1909.
Notice is hereby given that Charles B. Horner, of Lightning, Oregon, who, on July 21, 1904, made Homestead Entry No. 13723-Serial, No. 91200, for Lots 1 and 2, SW 1/4 NE 1/4, NW 1/4 SE 1/4, Section 1, Township 3 North, Range 49 East, Willamette Meridian, has filed notice of intention to make Final five year Proof, to establish claim to the land above described, before D. W. Shahan, U. S. Commissioner, at Enterprise, Oregon, on the 5th day of April, 1909.
Claimant names as witnesses: Charles C. Holmes, Colonel F. Graves, Guy C. Horner, William P. Rankin, all of Lightning, Oregon.
F. C. Bramwell, Register.

Used by the Multitude.
Levy's Oregon Grape Compound. For general spring tonic. Sold and guaranteed by Burnaugh & Mayfield.

NOTICE FOR PUBLICATION.
Department of the Interior.
U. S. Land Office at La Grande Oregon, February 15, 1909.
Notice is hereby given that Ezekiel F. Fargeant, of Enterprise, Oregon, who on October 2, 1903, made Homestead Entry No. 13322 Serial, No. 93269, for the North-east quarter of Section 34, Township 1 N., Range 46, East, Willamette Meridian, has filed notice of intention to make final five year proof, to establish claim to the land above described, before D. W. Shahan, U. S. Commissioner, at his office in Enterprise, Oregon, on the 5th day of April, 1909.
Claimant names as witnesses: Harry N. Vaughan, Elmer J. Jewell, Delmar Sargeant and Lora E. Allen, all of Enterprise, Oregon.
F. C. Bramwell, Register.

For Diseases of the Skin.
Nearly all diseases of the skin such as eczema, tetter, salt rheum and barbers' itch, are characterized by an intense itching and smarting, which often makes life a burden and disturbs sleep and rest. Quick relief may be had by applying Chamberlain's Salve. It allays the itching and smarting almost instantly. Many cases have been cured by its use. For sale by Burnaugh & Mayfield.
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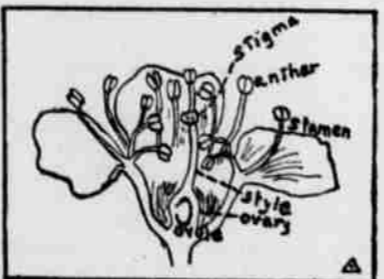


FIG. XII.—SECTION OF CHERRY BLOSSOM SHOWING MALE AND FEMALE PARTS.

clover the stamens are at the bottom of a slender tube, from which they cannot escape unaided. Plants of this nature are dependent on insects to transfer pollen from one flower to another. In order to attract these insects the flowers secrete a sweet nectar, which collects in the bottom of the tubes of which the flowers are composed.

Ants, flies, butterflies and bees are very fond of this nectar and in collecting it carry the pollen of one flower to the stigma of another. Bees are most important in doing this work because they gather so much more of the nectar than do the other insects. They often carry home some of the pollen, too, which can be seen sticking in yellow balls to their hind legs, but enough is always brushed off to fertilize the flowers which they visit. The blossoms of red clover are so large that the short tongues of ordinary honeybees cannot reach to the bottom. It is upon the larger bumblebees that this crop depends for its ability to produce seed.

Indeed, it is so entirely dependent upon them that the crop of clover seed is in direct proportion to the number of bumblebees in the neighborhood. It is anything but pleasant to run into a big nest of bumblebees with a mower