

was said to be made in Germany from the body of some mysterious animal from the East. It cost nearly \$400 a bottle. To be effective its use had to be prolonged over a course of two years.

The method of using the preparation involved another very primitive magical idea. Just as the savage believes that anything which has been in contact with the human body may be effective in working magic for or against that person, so these sisters were told that they were to wear a piece of cloth next their bodies for 24 hours. This was then to be burnt in the flame of a lamp by the fortune-teller and each would see her future husband in the smoke. This vision of the future husband on certain occasions such as St. John's Eve (June 23) or New Year's Eve is a common belief in peasant folklore everywhere; but in this case the smoke evidently takes the place of the crystal ball more commonly used by the fortune-teller, or the pool of ink in the palm of the Arab boy employed in Egypt, or of a pure youth as in Persia, where future events are to be foretold.

In addition, the "zep" was to serve the purpose of a binding charm, for it was to hold the lover. But as time went on and nothing happened, it became evident that it would not be efficacious unless used in a more materialistic fashion. One of the sisters was told that she must induce a man to come to the room and the fortune-teller would then sprinkle "zep" over him, so that he could never get away.

Science News Letter, August 6, 1932

PALEOBOTANY

Gall Swellings Found On Fossil Oak Leaf

GALL-FLIES flew in the Miocene, back in the times when wild camels and three-toed horses scampered in the country that is now Oregon. This is indicated by an interesting fossil oak leaf that has been studied by Arnold D. Hoffman of the University of Chicago.

Split out from between layers of shale, the leaf impression shows 25 flattened-down swellings closely resembling the hypertrophied growths caused on leaves and stems of present-day plants by the little wasps called gall-flies, that lay their eggs in plant tissues to give their young an abundant food supply.

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CHEMISTRY

Real "Artificial Silk" Is Promising Possibility

Silkworm's Cocoon Would Be Chemically Made Over To Produce Fiber Closely Resembling That of Nature

WHEN SCIENTISTS learned how to make a silk-like thread from the cellulose of cotton or wood, they dethroned the silkworm as the premier producer of material for stockings, dresses, and other intimate and public apparel for both sexes. Rayon or "artificial silk" is one of the new materials that the industrial revolution has made available generally since the World War.

Science now promises to invade the domain of the silkworm again. The production of real "artificial silk" is promised. The term real artificial silk may sound like a bull, but the new process justifies it.

The real artificial silk is a regenerated silk. The silkworm is a necessary actor in its making. Unlike rayon, which is not silk at all, the new fiber is real silk. It is artificial, however, because it is formed into fiber in much the same way as rayon.

In making regenerated silk, the silkworm's cocoon is converted into a sericin-fibroin solution of liquid consistency just about that which occurs

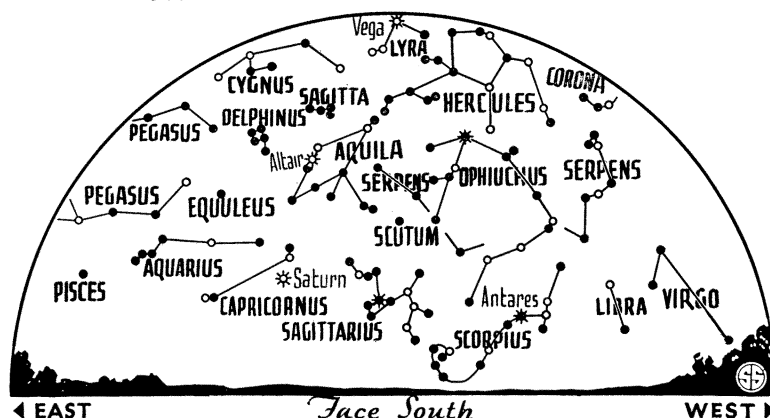
within the body of the silkworm before it spins its silk filament. It is a solution of real silk. From this point on, the process uses the experience of rayon manufacture. The silkworm solution is made into yarn as though it were cellulose solution destined to be rayon. It is squirted out of very fine holes into filaments that are twisted by a spinning machine into yarn.

Protein Rayon

The *American Silk Journal* believes that this real artificial silk will soon become an accomplished industrial fact. Perhaps it will be called a protein rayon instead of a cellulose rayon since the silk solution is a protein manufactured by the silkworm. It is said that the new product will approach real silk much more closely in its physical and chemical properties than any of the existing synthetic fibers.

The regeneration process has been perfected by the Japanese but the story is that the Japanese government will not permit its commercial utilization because it would seriously affect the estab-

* * ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS



THREE BRILLIANT STARS AND A PLANET

These are attractions of the southern skies during August. The three stars are of the first magnitude—Vega, Altair and Antares—and the planet is Saturn, the heavenly object girded by peculiar rings. The other two first magnitude stars visible are Arcturus and Deneb in the northern skies.

lished sericultural industry of that country. But American and European inventors have also produced processes and real artificial silk will probably come into use despite Japanese curbs.

The next step would be to duplicate synthetically the protein solution that the silkworm makes and make a real and wholly synthetic silk. Undoubtedly attempts are being made but success lies in the future.

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PHYSIOLOGY

Gland Extract Increases Body Growth But Not Brain

THE "BOOM FOOD" that formed the basis for one of H. G. Wells' earlier imaginative novels, causing gigantic growth in everything from human beings to hornets, might have produced huge creatures but would not have generated geniuses.

Such at least is the indication of experiments on white rats by Dr. H. S. Rubinstein of the University of Maryland Medical School. Dr. Rubinstein gave a number of the rats daily injections of extracts from the anterior lobe of the pituitary gland, which secretes a growth-speeding hormone. Litter-mates of the rats were kept as "controls," without the hormone injections.

It was found after ten weeks that the body-weights of the injected rats had increased appreciably over the weights of the controls. But when the rats were killed and their brains removed and compared, it was found that the injected rats had not gained brain weight in proportion to their gains in bodily growth.

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ASTRONOMY

Changing Constellations and Meteors Featured in Skies

Famous Perseid Shower is Expected to Reach Maximum on Night of Aug. 11 or 12 for Observers Throughout Country

By JAMES STOKLEY

THE MONTH of August does not depend for astronomical interest entirely on the eclipse occurring on the thirty-first. (*SNL, July 30, '32.*)

The summer constellations are beginning to disappear from the evening sky in the east and their places are being taken by those of autumn. The "Great Square of Pegasus" has begun to shine just above the eastern horizon. The "Northern Cross" in Cygnus, the swan, is high overhead a little to the east of the zenith. Still higher is Lyra with the brilliant Vega, while the star Altair in Aquila is seen just to the south. Near the southern horizon is Scorpius with the scorpion's tail curling toward the east. Just above the end of the tail is Sagittarius, the archer. Some of the stars in this constellation form what is often called the "Milk Dipper." This implement is inverted and the handle points toward the west point of the horizon.

Spica, the most brilliant star in Virgo, is very low in the southwest (in that part of the constellation not shown on the map) and above it is Bootes, with the bright Arcturus to mark its location. The great bear, Ursa Major, with the familiar "Great Dipper" is descending into the northwest. By means of the two

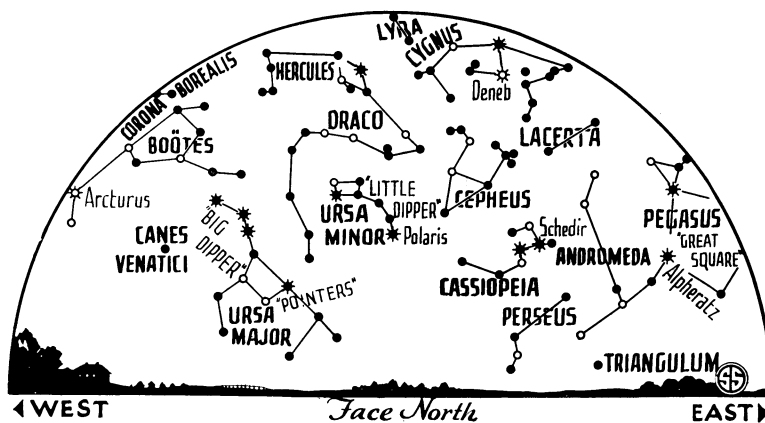
pointers, now the lowest part of the Dipper, we can locate the pole star, which is at the end of the handle of the little dipper, and forms part of Ursa Minor, the little bear. Cassiopeia, in the shape of the letter W, is seen to the eastern side of the pole, directly opposite the pointers.

Vega, Arcturus, Altair, Antares, the reddish star in Scorpius, and Deneb, the star at the end of Cygnus toward the north—these are the first magnitude stars now visible in the evening sky, and are the ones you should learn first if you want to know the constellations. In addition, August brings a planet to the evening sky. This is Saturn, famous for its remarkable system of rings. Just after sunset you can see it low in the southeast, below Altair, its steady glow making it distinctly different from the scintillating stars.

In addition to the stellar and planetary attractions scheduled, August is always of interest for the famous Perseid meteor shower. Because the earth turns so that we then meet them head-on, we can always see more meteors, or "shooting stars," after midnight than before. If you watch the sky for an hour on any night, you will probably see several of these bodies, which are really dust particles, most of them being no larger than a grain of sand or the head of a small pin, that are heated to incandescence and consumed in a blaze of glory when they enter the atmosphere of the earth. But if you watch the northeastern sky on the night of August 11 or August 12, you will see many more, provided the weather is clear and permits you to see any celestial objects. Then you may see as many as one or two a minute.

Astronomers who make a specialty of meteor study are always glad to receive observations from volunteer assistants. Just count the number of meteors you see during half hour periods, and send the numbers, with a full account of the circumstances under which the observations were made, to Dr. Charles P. Olivier, the University of Pennsylvania, Philadelphia, Pa.

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THE "GREAT BEAR" DESCENDS

Ursa Major with the familiar "Big Dipper" is low in the northwest at this season, and the two pointers by which the pole star can be located are the lowest part of the Dipper.