

AGRICULTURE

Early-Cut Hay Best For Milk Production

► LARGEST amount of milk is produced on hay cut at the full-bloom stage, it has been found in experiments at Cornell University.

Early-cut timothy produced 95% as much milk, and the late cut only 90% as much.

Not only does hay made at the full-bloom stage of the grass have the greater milk-producing value, but it also has the greatest total yield to the acre—2.56 tons for the season as compared with 2.32 tons for the early cutting and 2.53 tons for the late cutting.

The three hays were graded after curing. The early-cut molded during the barn-curing process; the medium cut, or full-bloom, was rated No. 1, and the late-cut, or seed stage, as No. 3. The scientists observed, however, that the cows ate larger amounts of the moldy hay than they did of the late cutting, and produced more milk.

Chemical studies were also carried out, showing that the earliest two cuttings retain a high carotene content after several months—enough so that six to nine pounds per day of the hay would furnish sufficient vitamin A value to insure successful reproduction in cows. In contrast, about 30 pounds of the late-cut timothy would be required for successful calving.

The study is being repeated before final conclusions are drawn.

Much of the hay harvested and fed in New York and Northeastern states is made from timothy and mixed grasses.

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ORDNANCE

Glass Armor Protected American Seamen

► GLASS armor sounds like something out of the Arabian Nights or the tales of King Arthur's Round Table; nevertheless it was extensively used in actual combat by the Navy during the recent war, and was also worn to some extent in combat ashore by the Marines. The story, hitherto held restricted, has now been released by the Navy.

The glass is in the form of exceedingly tough spun-glass fibers woven into fabric and impregnated with a hard plastic. It makes plates that are claimed to give better protection, weight for weight, than steel. It has the considerable advantage over steel of not throwing off injurious

splinters if struck by fragments of exploding projectiles. The plates are placed in pockets in life vests or other garments, and may be jettisoned at will.

Although the new armor material has been used mostly by the Navy, it was originally an Army development. It was invented by Brig. Gen. G. F. Dorion, Q.M.C., and has been given the name Doron in his honor.

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PUBLIC HEALTH

Check Child's Health Before School Opens

► IN THESE last few days before school opens, parents who have not already done so should make haste to have the children's health checked by the family doctor, or to finish carrying out his earlier advice for correction of health defects.

"Every child should enter school in September with a clean bill of health, with no handicap to deter him in his studies or make him a health hazard to other children," the Indiana State Medical Society has declared. Other health and medical authorities will agree.

If the children have not yet been immunized against diphtheria and whooping cough and vaccinated against smallpox, these protective measures should be started without delay. The children may have had these immunizations during their first year of life. The doctor may think it wise, however, to repeat the smallpox vaccination and to give another Schick test to learn whether the child still has good protection against diphtheria. This is particularly important for the child entering school for the first time, since he is the one most apt to catch any disease which another child in school may have.

The doctor will probably weigh the child and measure his height. These will be checked against the child's own record of the previous year, to see whether he is growing and gaining as he should. Comparisons of weight and height between one child and another of the same age do not mean as much, because children, like grown-ups, vary in build.

Eyesight and hearing, of course, will be checked to make sure the child is not being handicapped at school by inability to see the blackboard or lesson books or to hear the teacher clearly. Many a child has been labelled stupid or disobedient when his trouble was an unsuspected case of poor eyesight or poor hearing.

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IN SCIEN

MEDICINE

Rh Blood Factor Is Absent in Chimpanzees

► THE RH blood factor, which in humans may cause danger and even death in the case of repeated transfusions into the veins of individuals not having it, was absent in 15 chimpanzees tested by Dr. Alexander S. Wiener, of the Office of the Chief Medical Examiner, New York City, and Dr. Marjorie Wade, Yerkes Laboratories for Primate Biology, Orange Park, Fla.

The Rh blood factor was so named by the scientists who identified it in the blood of rhesus monkeys. Apparently all rhesus monkeys have it. Different races of mankind vary somewhat in the proportion having the Rh factor; in the United States about 85 out of a hundred are Rh positive and the other 15 have the Rh negative incompatible blood.

No theory is proposed by Drs. Wiener and Wade to account for the fact that the man-like ape, the chimpanzee, should be Rh negative.

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INVENTION

Sleeping Cars May Have Nothing But Lower Berths

► A SLEEPING-CAR with as many berths as the present Pullmans yet without any of the unpopular "uppers" is the novel invention on which patent 2,382,402 was granted to T. de Roode of New York City. The seats are single, instead of double as in the present-type sleepers. At night they are folded down in such a manner as to provide two parallel rows of berths on either side of the central aisle; but these are in a staggered position.

Since most persons are wider in the middle than they are at head and feet, each berth is built with a wide middle and narrow ends, so that the staggered construction is calculated to give a maximum amount of accommodation with a minimum waste of space.

Upper berths (at least one row of them) may also be lowered from the wall if desired; in this case the car simply gains in number of passengers who may be carried.

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CE FIELDS

ENTOMOLOGY

Mosquitoes Now Made To Shine in the Dark

► MOSQUITOES aren't being given a break at all any more. First they produce improved repellents, that drive them off a tempting area of exposed human skin with a disappointed "zing!" Then they turn up DDT, which is sure death in submicroscopic doses. Now they spray them with stuff that makes them shine in the dark, so their nefarious goings and comings can be traced.

Not that the pests are being crossed with lightning-bugs. Neither is their glow intended for the suffering individual 'skeeter-slapper on porch or lawn. The new trick is primarily for the use of mosquito-fighting scientists, who want to find out which way and how far the insects fly.

The mosquitoes are marked for later identification by spraying or dusting them with fluorescent compounds—those chemicals that shine with a glimmering light of their own when irradiated with the "invisible light" of ultraviolet rays. Three different compounds have been tested so far, by Dr. John W. Zukel of the U. S. Public Health Service; they make the mosquitoes fluoresce with blue, red and green glows. When mosquitoes thus marked are later recaptured, it is very easy to identify them and to tell where they came from.

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RADIO

Television Broadcasts Unaffected by Plane Crash

► SCHEDULED television broadcasts from the tower of the Empire State building in New York were unaffected by the recent crash of an Army plane into the building below the tower, and there was no injury to the new installation, just completed, to be used in conducting field tests to study problems faced in employing higher frequencies in television broadcasting. A regular broadcast was on the air two hours after the crash, and no special difficulties have shown up since.

Scaffolding about the tower used in the erection of the new television transmitter, atop the building 1,250 feet above the street, had been removed only a day

or two before the crash, the installation being completed but not yet in use. When testing starts it will be conducted by the Radio Corporation of America in cooperation with the National Broadcasting Company, which operates the regularly scheduled television programs. The tests will in no way interfere with the regular broadcasts.

The new installation, to study the problems of using higher frequencies in television broadcasting, will employ a new transmitter capable of developing five kilowatts of output power at 288 megacycles, a somewhat higher frequency than now assigned by the Federal Communications Commission for commercial television transmission.

The primary purpose of the new station is to ascertain the service area of a transmitter operating in these higher frequencies. The present television audience in the area will be unable to pick up the test broadcasts which will be received only on specially-designed receivers in possession of the survey engineers.

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ENGINEERING

Petroleum Research Centers to Be Established

► A GIGANTIC science laboratory, housed in eight buildings, will soon be under construction in Linden, N. J., for the Standard Oil Development Company, and will contain, it is claimed, the world's most modern and extensive research equipment in the oil industry. One building for similar work will be erected for the same company at Baton Rouge, La.

The new laboratories at both locations will be used not only for developing improved products for oil and methods for producing them but additional extensive work on extending sources of supply of oil products will be carried out.

This latter work will include production of oil from natural gas, gasification of coal, production of oil from coal and from other carbonaceous deposits such as oil shale.

Basic studies will also be conducted on the application of catalytic processes to derive chemical raw materials from petroleum. One section of the new plant will be devoted to research on extremely low-temperature polymerization, important in the field of new plastics. A process of this nature is the basis of the synthetic butyl rubber, which is a product superior to natural rubber for inner tubes in automobile tires and for certain other purposes.

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RESOURCES

Creosote-Pitch Mixture Used as Fuel in England

► A COAL TAR fuel widely used in the United Kingdom during the war years, and still in use, has been described by the Ministry of Fuel and Power in London. It is a creosote-pitch mixture, with about equal parts of the two substances, and is made entirely from English-produced materials.

More than 500,000 tons of this fuel are now being consumed annually in Great Britain, and this represents approximately two-fifths of the total amount of liquid fuel at present burnt in English industry. It is similar to fuels used by some plants before the war, and even during World War I. This, however, is not to be regarded, the Ministry states, as a "second best" fuel, to be tolerated only until such time as other liquid fuels become available.

The 50-50 creosote-pitch fuel mixture is homogeneous, and the so-called free carbon consists of microscopic particles of resinous material, which, when the fuel is held in storage at from 80 to 90 degrees Fahrenheit, remain permanently dispersed.

Heating equipment formerly used with other liquid fuels can be used with this coal tar product, provided certain minor adjustments are made. If formerly used with petroleum fuels, the equipment must be thoroughly drained and flushed with hot creosote oil, because if petroleum fuels are allowed to mix with tar fuels, the resinous matter in the latter is immediately precipitated.

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PUBLIC HEALTH

Increase in Polio Cases Slight; Peak May Be Near

► INFANTILE paralysis cases increased only slightly during the week ending Aug. 18, giving rise to the hope that the peak of cases for this season may be near or even passed. The total number reported to the U. S. Public Health Service was 692. This represents an increase of only 21 over the previous week's total, when cases jumped by 197 to reach a total of 671. The total number of cases since Jan. 1 is 4,276, compared to 6,262 for the same period last year.

States reporting increases this past week were New York, New Jersey, Pennsylvania, Illinois, Virginia, Tennessee and Texas.

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