

## AGRICULTURE

## Rust Brothers Change Original Plan to Lease Cotton-Pickers

THE RUST brothers, idealistic southerners who are almost ready to begin manufacture of their widely-heralded cotton-picker, have dropped their original plan to lease the machines and will now sell them outright.

Although no definite information could be secured as to the reason underlying the change in plans in connection with the cotton-picker, which promises to create an economic revolution if and when introduced into the South, it is believed that one of two factors or both may have induced the brothers to drop their intention of limiting its use.

Two rival cotton-pickers are being developed, one by the Berry-Gamble-Hanauer interests and the other by the International Harvester Company. With two competing pickers on the market, no leasing scheme would be workable.

Although larger profits can be made in the long run in many fields by leasing machinery rather than selling it outright, capital necessary for expansion in the early days of manufacture can be most quickly secured by immediate sale.

Unusual interest has been attached to the development of a successful cotton-picker, because its widespread use would directly result in profound disturbances to the labor market throughout the South. Cotton-picking is virtually en-

tirely a hand operation employing hundreds of thousands of men and women for forty days a year. Even though use of the machine may not mean permanent unemployment for the farmhands and sharecroppers, it will mean a temporary displacement of uncomfortable dimensions.

Realizing this, the Rust brothers, John D. and Mack D., at first proposed to limit its use in the United States so as to minimize its effects. They also turned the patents on their device over to the Rust Foundation, a non-profit corporation which will receive the lion's share of profits and will devote them toward educational and cooperative development purposes. That part of the plan, they declare, has not been changed.

Patent No. 2,101,100, covering additional features of their famous cotton-picker, has been awarded the Rust Brothers.

Improvements in the machine to enable the wheels on which the machine runs to supply power for turning the cotton-picking spindles are covered by the patent.

More flexible controls to enable the operator to follow more closely the contour of the bushes are also among the refinements featured in the patent.

*Science News Letter, December 18, 1937*

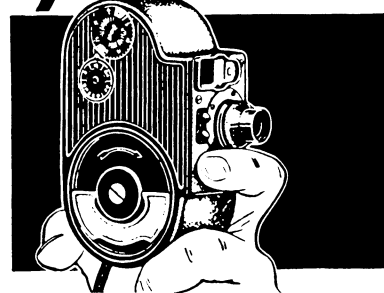
phorus fertilizer to replenish his soil so that crops will grow. In war—in the air, on the ground or on the oceans—phosphorus comes into its own as the creator of dense smoke screens which shield a military force from its enemies. Deadly poisons—used commercially to exterminate rats—contain phosphorus.

For years the phosphorus in animal bones was the principal source of the strange element. But gradually it was found that by heat-treatment the phosphorus in certain rocks could be removed as a vapor and condensed under water to yield the waxy-colored element.

The newer way, and the method for which the Monsanto Chemical Company received the current award, is to obtain

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## CHEMISTRY

## Combustible Phosphorus Made On Large Scale by New Method

PHOSPHORUS, the chemical element which bursts into flame when exposed to air, is now being produced, and shipped, in tank car lots to open up a new field of chemical industry.

This achievement is being hailed as one of the outstanding chemical industrial developments of the year. It was recognized by the presentation of the Chemical and Metallurgical Engineering award to the Monsanto Chemical Company for this development.

Elemental phosphorus has long interested scientists. Its spontaneous burning is fascinating as well as dangerous. Be-

cause it ignites easily and glows in the dark, the ancient alchemists named the element phosphorus mirabilis—"miraculous bearer of light."

In life and death, peace and war, industry and agriculture, phosphorus is an element interwoven with modern civilization. When you eat cakes or other bakery products made with baking powder, the action of phosphorus is entering your existence. When you strike a match the sparks and flame come from the phosphorus present. There is phosphorus in your bones and those of any animal. And the farmer requires phos-

the phosphorus with the heat of an electric furnace.

Sand, rock containing calcium phosphorus, and coke are fed into the electric furnace. In the high temperature of the carbon arc (6,620 degrees Fahrenheit) the three raw products react to create carbon monoxide and elemental phosphorus in the form of a vapor. Because the phosphorus readily and dangerously combines with air, the whole industrial operation must be carried out under reduced pressure or else in a vapor of hydrogen or nitrogen. Purification of the phosphorus vapor condensed under water can be accomplished by melting the element and stirring it. Or certain oxidizing agents like potash can be used to remove impurities.

With the air still excluded, the purified phosphorus can be sealed in steel drums or even tank cars and shipped.

*Science News Letter, December 18, 1937*

## From Page 390

just necessary evils" if they admitted that, with the full cooperation of the patient, pyorrhea and loss of teeth is not necessary and tooth decay can be kept to a minimum.

Dr. Loughry stressed the importance of replacing lost teeth. Sometimes it is necessary to extract some remaining teeth in order to secure a normal bite. The teeth, he explained, work in relation to each other. If even one is missing the whole chewing system is thrown off balance. All the teeth should be used evenly in order to exercise the gums and thus stimulate the supply of blood to gums and teeth. When there is a good blood supply, the teeth and gums are more resistant to decay, infection and other injurious agents.

### Jawbone Disease Masquerades

Many cases of pain that appears due to sinus or ear trouble may be due to disease of the lower jawbone, Dr. James B. Costen of Washington University School of Medicine at St. Louis explained.

Among the symptoms traced to this jaw condition are burning tongue, dizziness, deafness, stuffy sensation within the ear, buzzing and grating noises, dull pain within the ears and sinus-like pain. Gnashing of the teeth or partial lockjaw is a serious handicap to successful treatment, and if measurements for artificial teeth are made while this symptom is present, there is apt to be a relapse of the original condition.

*Science News Letter, December 18, 1937*

### MEDICINE

## Unethical Not to Patent Medical Discoveries

"IT IS unethical not to patent medical inventions," Arthur G. Connolly, patent attorney of Wilmington, Del., declares in the leading article in the scientific journal, *Science*. (Oct. 29)

The reasons for this conclusion, which Mr. Connolly himself points out may startle many persons, are the following:

1. Even if a physician refrains from patenting a medical invention and merely reports it in a medical journal, he does not necessarily prevent others from patenting it.

2. If the invention is patented by others, it may be developed in a way that will harm the public.

3. If the invention is not patented, there can be very little control over the quality of the product or of the price at which it is sold.

The physician who wishes his inven-

tion to be of greatest service to the public will achieve that end best, Mr. Connolly believes, by patenting his invention and then developing the patent for the public benefit.

Mr. Connolly suggests that it would be helpful for the medical profession to establish a central committee which would protect by patents the inventions of the profession. This same committee could develop the patents so as to safeguard the interests of both public and physicians.

This suggestion is somewhat similar to the proposal recently made by Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*, that that medical association might organize a non-profit holding corporation to administer patents in the medical and health fields.

*Science News Letter, December 18, 1937*

### PUBLIC HEALTH

## Climate May Play Part In Infantile Paralysis Immunity

THE VIRUS of infantile paralysis is widely scattered throughout the world, existing even in places where epidemics of the disease rarely occur, Drs. N. Paul Hudson and E. H. Lennette of Ohio State University and the University of Chicago reported to the American Society of Tropical Medicine.

Climate, it appears from their studies, may play a part in bringing about a natural immunity or resistance to the disease.

The two bacteriologists examined the blood of small groups of persons living in such widely separated places as Nashville, Tenn.; Liberia; Peiping, China; the Philippine Islands; inland Brazil; and Thursday Island, Australia. Most of these persons, at least four-fifths, had in their blood substances which could neutralize the virus of infantile paralysis. Presence of such neutralizing substances in the blood usually means that the person has previously had the disease or at least has gotten some of the virus into his system and has developed im-

munity or resistance to the disease. Consequently it appears that the virus of the disease is pretty widely scattered around the world.

Epidemics of infantile paralysis are uncommon in the regions in which Drs. Hudson and Lennette made their blood studies, although occasional sporadic cases occur, or the disease may be endemic, a few cases always occurring but with no epidemics.

Since most of these places are in the tropical or subtemperate zone, the two bacteriologists suggest that climate affects the relation between the virus and man. Man in these climates apparently can play host to the virus, which is a parasite, so that it does not die off, and at the same time is able to build up an immunity to it so that he rarely gets sick with infantile paralysis.

*Science News Letter, December 18, 1937*

The wild rooster, jungle forefather of domestic fowls, cannot crow so loudly as the barnyard cock.