

an inch in ten seconds - they are about three hundred-thousandths of an inch in diameter and are observed in a powerful beam of light with a small telescope. They are then seen as specks of light against a dark background.

In the formation of these small drops with an atomizer, occasionally one becomes charged by friction; that is, it may carry an additional electron. If then the droplet is between two electrically charged plates it will behave differently from the uncharged particles, Dr. Hull stated. Those which are not charged will fall. The charged particles will be attracted to the positive plate. By the use of the proper voltage between the plates, these charged particles can be made to fall more slowly, held stationary, or caused to move upward. If two electrons, instead of one, are held by the droplet, the effect is doubled.

Doctors Hull and Williams have measured the charge of the electron in a different way, by means of the Schrot effect, and have opened a field for research which promises to add to the knowledge regarding the electron and its properties. Previous attempts were made by German scientists to make the electron audible, and to measure the charge of the electron by this method. Only approximate values were obtained, however. By the procedure used by Drs. Hull and Williams it is possible to obtain values of high accuracy. The measurements thus far made by this method give a value for the charge of the electron within one half per cent. of Dr. Millikan's value. The scientists made the measurements while working with radio frequencies and studying vacuum tubes.

Atoms have also been made audible within the past few weeks. It was recently announced that a device had been perfected in the research laboratory of the General Electric Company that reproduces in a radio loud speaker the rustle made by bringing a magnet close to a bar of iron and thus making groups of atoms stir themselves.

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#### SCIENTISTS SEEK MEANS TO LIMIT TIMBER WASTE

This is the story of the House that Jack Didn't Build.

These are the woods where the trees used to grow that would have furnished the lumber for the house that Jack might have built. The woods are the areas of virgin timberland in the United States. They are two-thirds gone now. Of the original 681 million acres of forest in the eastern United States less than a tenth now remains uncut; the West fares better, but badly enough, for nearly half of its original 141 million acres also are gone.

Destruction recorded in such tremendous figures is engrossing the attention of the National Conference on the Utilization of Forest Products called by the U. S. Department of Agriculture. Representatives of federal and state governments, of the leading universities and forestry schools, and of the wood-using industries, are getting their heads together over the problem of the House that Jack Didn't Build.

Not only is the ax eating fast and deep into our remaining woodlands; but it is accompanied and followed by waste, in a dozen devouring forms. Fire, decay, insect injury, all take their toll of the trees even before the woodsmen approach. How much, is not accurately known, but the losses are large.

Then when the woodsmen do come, the waste continues merrily. Department of Agriculture figures show an average of 28 per cent. of any given stand of timber

wasted in the cutting, as slash, stumps, rejected whole trees left to rot where they fall, etc. And when the 72 per cent. that goes out as logs gets to the mill another chapter in the story unfolds - perhaps the biggest waste item of all. For here each log yields only a trifle more than half its bulk as usable lumber. Some 47.4 per cent. goes to the blazing trash-heap of the mill, as bark, slabs, sawdust, and other refuse. Thus only a little more than one-third of the trees of an average forest area ever reach the lumber yard as beams and boards.

Further wastes occur in the lumber yard. Decay again creeps in, and losses due to careless handling and seasoning.

And so the story goes. Losses again in building the house. Losses in furnishing it - furniture factories shave off as waste as much as 60 to 75 per cent. of the wood they take in. Losses in keeping the house in repair; for there again the demon of decay gets in its deadly work. Losses through decay in fence posts, telephone poles, railway ties; government estimates show that 50 per cent. of each year's new stock in these three items must go to replace losses due to decay.

It is against this blind devourer, decay, that the main drive of the conference is made. Replacements through reforestation of denuded areas are necessarily slow. Protection against fire and other destruction of forests can only hold stationary what is there already. Immediate results must be sought through the stoppage of the leaks of waste and decay.

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#### PIGS' RHEUMATISM CURED BY DOSE OF SUNLIGHT

Even pigs need the sun. Recently doctors proved that children who were allowed to play in the sunlight were not troubled with rickets, or malformation of the bones.

And now Dr. Harry Steenbock, E. S. Hart, and J. H. Jones of the University of Wisconsin have proved that sunshine is a preventative of the rickets, or rheumatism, common to hogs in northern states.

Dr. Steenbock in a series of experiments with rats had recently demonstrated that foods exposed to sunlight can be used as a cure for rickets. It remained to be determined whether or not exposing the pigs to sunlight would have the same effect.

Twenty-four pigs, reds and blacks, were used for the experiment. To discover whether it was the sunlight alone that prevented the disease they were divided into groups of six. Two of these groups were fed on yellow corn, which is rich in antirachitic vitamin, the other two were fed on white corn which contains less of the antirachitic vitamin.

Two of these groups were placed in "dark" pens and two in light. The "dark" pens could not be considered dark in the ordinary sense of the word, but the pigs in them were shielded from the direct rays of the sun. Both groups were placed in inside pens with outdoor runways. The outdoor runways of the pigs kept in the dark were roofed over with a composition roofing which kept off the direct rays of sun.

The range of the experiment was from June to January. The time is important as the intensity of ultra-violet solar radiation varies decidedly with the season