tails and long necks at the ends of which sit ridiculously small heads. They float, swim and feed in the waters with unhurried languor, for they are sluggish, cold-blooded creatures. They enter by the tens of thousands, huddling close together as reptiles do, and filling every lagoon as far as the eye can see. Myriads of them cluster the watery landscape like city-throngs crowding a popular beach during a heat-wave.

A Great Change

Now Mother Nature slowly changes the stage setting. The lakes dry up and the swamps vanish. The sauropod dinosaurs become more and more concentrated as they are pushed together in huge herds by the drying up process which changes lakes into ponds, ponds into pools and lastly into quickly drying puddles. The sauropod dinosaurs are water animals and the disappearance of the water is their death sentence. They cannot migrate because of their great bulk. Some starve to death—others are stranded in the mire that follows the receding water—while others, in their frenzied rush to escape destruction, struggle to solid land, only to be killed by the flesh-eating monsters that skulk around the pools and live high, for a time, on the hapless sauropods.

A clear-cut cross section of this large scale drama is now being uncovered in the Red Gulch Quarry. The hill in which the skeletons rest was once upon a time the bottom of a large lake that shrank into a tiny pond. It is perfectly evident that it is the bottom of that pond we have stumbled upon—the very spot where a dozen or more sauropods made their last and futile stand against fate—one of the last remnants of hundreds, perhaps thousands, of these beasts that lived and throve in that very spot until the lake began to dry up and the relentless battle started in which the weak were swiftly killed while the strong survived for only a short time.

May Find Victors, Too

We have not found any as yet, but I would not be at all surprised if, dovetailed in among the sauropod bones, we should find remains of the carnivorous dinosaurs that, undoubtedly, came to the lake to feed on the sauropods and eventually died of starvation when their victims sank into the bog.

Science News Letter, July 28, 1934

Pieces of fossil wood found 200 feet underground near Placerville, Calif., have been identified as trees of the Miocene epoch, 11,000,000 years ago.

PHYSICS

Old Violin Makers' Secrets Revealed by X-Ray Analysis

Treatment and Varnish Are Not So Important As Is Selection of Wood for Back, It is Found By Physicists

THE SECRET of the tone of violins fashioned by such famous makers as Stradivarius, Amati, Pique and others, has been discovered.

Through X-ray studies of structure of wood in violins of various origins, Dr. K. Lark-Horovitz and W. I. Caldwell, physicists of Purdue University at Lafayette, Ind., have found that proper selection of wood is more important for the quality of the instrument than treatment and varnish.

By careful selection of wood as a result of the Purdue researches it will be possible, it is believed, to make modern violins that are the equal in tone to those by famous makers.

The results of the Purdue researches were communicated to and published by the British scientific journal, *Nature*.

Definite fiber structure was found in spruce wood used for the top of violins, but the pattern of molecules revealed by the X-rays when they were turned on the wood used for the back showed that the woods, mostly maple, are different for instruments of different tone quality. Instruments with an even and smooth tone quality, especially for higher pitch or E-string, show an almost complete lack of orientation in the wood used for the backs.

Makes Tone Harsh

Violins with a harsh tone quality in general, weak response and shrill upper register showed a marked fiber structure in the maple used in the construction of their backs.

"Our investigation indicates," the Purdue scientists concluded, "that for a fine instrument only the top should be characterized by different velocity of sound in different directions, whereas the velocity of sound in the back should be the same in all directions so as to produce the best results."

Not since the French investigations of Savart over a century ago had there been adequate inquiry into the choice of material for violins. It had been stated repeatedly that age, treatment and varnish change the character of the wood, but the studies of Dr. Lark-Horovitz and Mr. Caldwell indicate that this is not the case.

Modern makers of fine violins by using X-ray analysis of woods and following the construction methods revealed by the new studies are expected to produce modern instruments that rival in usefulness the old violins valued at many thousands of dollars.

Science News Letter, July 28, 1934

ENGINEERING

Don't Buy "Gas Savers" Warns Bureau of Standards

DON'T BUY "gas savers," "grease absorbers," or "burner protectors." They don't save a penny; in fact, they usually cost more by increasing gas bills and many of them causes headaches, or worse effects of that stealthy and dangerous poison, carbon monoxide.

The National Bureau of Standards has conducted an investigation of a number of gadgets and appliances that were sold over the doorsill by salesmen who lauded them to the skies in extravagant claims of their value. The results of this research called for a warning against such purchases, which the Bureau issued.

All of the "gas savers," it stated, affected the operation of a satisfactory gas range in such a way as to increase the tendency to form carbon monoxide, which even in very small amounts is injurious to health. Although agents sometimes boasted of a reduction in gas bills as high as 30 per cent., none of the attachments tested appreciably increased efficiency while some of them considerably increased the amount of gas needed for certain purposes.

Lower Efficiency

The "burner protectors," the report continued, keep the burners clean but do so at the expense of cooking efficiency. None of the water backs tested proved satisfactory while some of them caused the formation of carbon monox-