## Test Anti-Evolution Law

*(Continued from p. 7)*

the street. Practically all of the teachers and perhaps the professional people of the state favor repeal.

Most people would agree, however, that there is little chance for the passing of a repeal by the general electorate, such as was the method in 1928 for getting the statute on the books. And there is no significant sentiment in the General Assembly, Arkansas' legislative body, for an initiating move.

But the real issue is not religion, science or academic freedom. The real issue for many Arkansans is *change*. And many hold to this resistance as dearly as to their fundamentalism. The Arkansan is still fiercely individualistic, intensely protective of local values, and believes less government means slower changes. But it just may be that when the petition is docketed—and many expect that to be soon—a native Arkansan, waging her fight in her state's own courts, will help Arkansas become the first of three remaining states with evolution laws still on the books to say "yes" to a new day of religious insight, scientific inquiry, and academic freedom.

• Science News Letter, 89:7 January 1, 1966

CHEMISTRY

## Slush Hydrogen Seen As Rocket Engine Fuel

➤ A MIXTURE of solid and liquid hydrogen, called slush hydrogen, is being investigated as a possible rocket fuel at the cryogenics laboratory of the National Bureau of Standards Institute for Materials Research in Boulder, Colo.

D. B. Mann and D. B. Chelton and associates have developed a laboratory method of producing slush hydrogen, involving a freeze-thaw process, which could be used to manufacture large quantities of slush hydrogen in batch-type slush generators or in large hydrogen storage dewars.

As a fuel for sophisticated rocket engines such as the Saturn and Centaur, slush hydrogen would have two advantages over the presently used liquid hydrogen. Slush hydrogen requires less storage space because of its greater density, and it has a considerably longer storage time.

In the newly developed process, solid hydrogen is formed on the surface of liquid hydrogen by vacuum pumping. Then, after careful pressure modulation, the solid, porous mass breaks loose from the container walls, sinks to the bottom of the tank and breaks into very fine particles. These very fine, solid particles in liquid make up the desired form of slush hydrogen.

Experimental and analytical interests are centered primarily on the shape and distribution of the solid hydrogen particles, and the effects of aging upon them. It is believed that slurry flow, developed for pipeline transport of crushed ore or coal in water, could be applied to the case of hydrogen slush. Data on particle size and terminal velocity of the particles as they settle in the liquid are being accumulated and analyzed with the aid of high-speed photography and a computer.

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# Nature Note

### The Quiet Oyster

➤ THE OLD SAYING, "a noisy noise annoys an oyster," is quite true, for the soft-bodied mute creature quietly lives in sedimentary retirement between two stony grey shells in protected seas, bays and sounds.

When the transparent baby larvae oysters are first born, they swim freely in the water. In about 32 hours they start to secrete a shell, and within six days they are enclosed in their life-time shell that grows as they grow. When they are only two weeks old, they go through a "spat" stage of development during which they must attach themselves to some solid object or else they die. Once attached, they stay the rest of their lives.

Members of the phylum Mollusca, oysters have no foot, and have only one muscle to open and close the shell, unlike the two muscles of other bi-valve or two-shelled animals. The two parts of the oyster shell are unequal in size and shape: one is large, round, thick and securely fastened to some stone or object; the other is flattened, smaller and thinner. An undisturbed oyster can grow 18 inches long, but oystermen usually harvest them when they are four or five inches long.

Men cultivate these marine animals somewhat as they raise chickens or hogs. Of the hundred living species, only about four oyster species are important to the fishing industry—the European, Portuguese, Japanese and the American, *Ostrea virginica*, native of the Atlantic Coast. Oysters should be provided a quiet sea bottom with flowing fresh water, enough space to prevent overcrowding, and protection from sea stars and snails. Latest serious hazard to the oyster industry is the increasing pollution from chemicals and other wastes that are killing off oysters in large numbers.

Although all oysters may sometimes grow pearls, most of our gem pearls come from "pearl oysters" found off the Pacific Coast, northern Australia, East India and in the Persian Gulf.

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# Do You Know?

Visitors to the permanent exhibition of child art at Frunze in the Soviet Republic of Kirghizia are guided by a remote-controlled *robot*, bilingual in Russian and Kirghiz.

The rib of a severely handicapped thalidomide child was transplanted to her abortive *arm*, taking the place of the radius, and the child can now stretch the arm and pick up things.

Natives of the Solomon Islands chew certain roots and, reportedly, achieve permanent *barrenness*.

Sigmund Freud believed that someone other than William Shakespeare wrote the *plays* attributed to him.

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