

ical therapy will result from a plant to be built during 1955 at Oak Ridge, Tenn., to extract from the wastes or "ashes" of atomic furnaces cesium 137, which gives off intense gamma rays. The 200,000 curies per year to be extracted will allow the use of this radioactive material for food preservation as well.

There should be expected some clarification of the properties of the fundamental subatomic particles that are called K-mesons or charged heavy mesons, which physicists admit now are "in a mess." The theoretical and experimental exploration of other subatomic entities will continue.

The great telescopes of the world will be improved by the use of image converters, similar to television methods. These will increase the speed of spectroscopic observations and decrease the exposure time for bright objects, such as the planets and granulations of the face of the sun.

There will be progress in understanding the evolution of the stars and the structure of the galaxies. The expanding universe will have new dimensions due to a revision of the constant which is dependent on brightness and velocity that will result from photometric measures of nebulae.

There may be progress in discovering the origin of the main magnetic field of the earth and also the cause of glaciations in the earth's past.

A giant electronic computer will go to work making numerical forecasts of weather.

In aviation, 1955 will see the inauguration of regular operation in the United States of turbo-prop airliners.

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ICHTHYOLOGY

Yearly Salmon Run

► SALMON FISHERMEN in the State of Washington may soon be catching pink salmon every year instead of every other year as is now the case. Attempts by Washington's Department of Fisheries to establish a run of pink salmon during even-numbered years have shown some promise.

"For the first time in history," stated C. H. Ellis, supervisor of the Department's hatchery management and research division, "even-year pink salmon have returned to Washington waters." Heretofore, pink salmon made their run only during odd-numbered years.

To establish the off-year run of pink salmon, the biologists obtained even-year spawn from Canada, but instead of liberating the fry just as they were ready to feed as was done in the past, they were reared in salt water until they attained a fair size.

In 1950, between 300 and 500 adult pink salmon reared in this manner returned to the Samish River. This group was allowed to spawn naturally and, in 1952, 50 adult fish returned. Again, the 50 fish were allowed to spawn naturally, but only a few returnees were observed this year. Pink

PSYCHOLOGY

Public School Curriculum

► PRESSURE GROUPS rather than either educators or parents determine what should be taught in the public schools—at least in California, Dr. George C. Kyte, professor of education at the University of California, found in a survey reported to the American Association for the Advancement of Science meeting in Berkeley, Calif.

Well meaning organizations have been responsible for having many requirements written into the state law, he found.

"Practical entomology" was made a requirement with the idea that this would help orchard growers in fighting insect pests in California's citrus groves.

The WCTU is behind the teaching of "evil effects of alcohol, tobacco and narcotics."

The Grand Army of the Republic pressed legislation to introduce teaching of "civil government."

The California Club urged the teaching of "humane education," and similar subjects.

The Native Sons and Native Daughters are responsible for the teaching of the "history of California."

"Fire prevention" was added to the curriculum at the insistence of public and private organizations.

The American Society for Thrift, the War Loan Organization and the bankers' association got behind the introduction of "thrift."

salmon go out and return in two-year cycles. Each fish lives through only one such cycle.

"From this procedure, it became quite evident that a single generation transfer could be accomplished on the first return, but would fail to maintain itself under natural conditions," reported Mr. Ellis.

Consequently, the Washington fisheries experts have taken the eggs from another even-year planting, and these will be reared and planted from the two salt-water stations established in Washington in recent years.

Mr. Ellis pointed out that "all of the work to date has been entirely in the experimental phase, but we believe it holds some promise with a refinement in technique of developing a group with stronger homing instincts."

The establishment of an even-year run in Washington's waters, like that now enjoyed by fishermen in Canada and most of Alaska, will be more than welcomed by the Northwest fishing industry.

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The average hen lays 180 eggs a year.

Only twice in the history of California have educators had a voice in school legislation. Once was when John Pelton, a Massachusetts schoolmaster who went to California in the gold rush, was given the job of writing the original bill. Even then, legislators tacked on two additional requirements. The other occasion was in 1925 when citizens and school officials got together to map out needed revision of the legislation.

Recent polls show that what the public wants its children to learn in school are the three R's, U. S. history, civics, geography, the U. S. Constitution and Declaration of Independence. Rated as almost as important are morals and manners, accident prevention and training for healthful living.

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INVENTIONS

U. S. Inventions Available Royalty-Free

► A PROCESS to extract rubber from a shrub and a ceramic anti-corrosion coating for metals are among the 308 government-owned patents available on a royalty-free license.

The inventions are printed in the last volume of a seven-booklet series, compiled by the Government Patents Board, which lists over 4,300 such patents. Since these inventions were developed with public funds, they are considered the property of the people. The patents are licensed on a non-exclusive basis.

Short descriptions of each invention are included in the booklet titled, "Ceramic, Paper, Rubber, Textile, Wood and Other Products and Processes" (see SNL, Dec. 11, p. 380).

The ceramic coating process protects critical metal parts from corrosion at temperatures up to 1,800 degrees Fahrenheit. Bombers' heat exchangers treated with this coating lasted up to 12 times longer than previously designed exchangers.

The rubber extracting process, developed by the Department of Agriculture, gives up to 95% yield from the guayule shrub.

Each of the booklets, which can be bought from the Department of Commerce, Washington, contains the patents of possible interest to a specific phase of U. S. industry.

The other volumes are "Instrumentation" (see SNL, Aug. 21, p. 124), "Chemical Products and Processes," "Food Products and Processes" (see SNL, Nov. 6, p. 300), "Metal Products and Processes" (see SNL, Nov. 13, p. 316), "Machinery and Transportation Equipment," "Ordnance" (see SNL, Nov. 27, p. 348) and "Electrical and Electronic Apparatus" (see SNL, Dec. 11, p. 380).

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