

A. H. R. Fedden, aeronautical expert of the Bristol Aeroplane Company, Ltd., who has just recently been awarded the 1938 Daniel Guggenheim Memorial Award for this development, told the Society that any adverse bias Americans may have on sleeve valve engines—based on their use in the now-defunct Knight type motor cars—is completely unfounded, for major improvements have since been achieved.

Sleeve valve engines require less maintenance than do the ordinary engines with overhead valves, widely used in automobile engines. The valves in the sleeve valve type are simply openings in the cylinder wall which are opened and closed by the up and down motion of the piston.

A total of more than 10,000 hours of running and flying experience with sleeve valve engines has now been obtained by the Bristol Company, Mr. Fedden declared.

Science News Letter, July 2, 1938

CHEMISTRY

Lignin, Common Waste Used in Water Softener

LIGNIN, waste product of the nation's forests, utilization of which scientists are continually seeking, is among the substances which can now be treated to produce a water-softening material, said Howard L. Tiger of the Permutit Company, New York City.

Coal, lignin or wood can be treated by a variety of chemicals to produce a blackish granular material known as Zeo-Karb which can decrease the alkalinity of raw waters.

Substances which produce this alkalinity help form boiler scale and cause corrosion in the boilers of steam generator plants.

Science News Letter, July 2, 1938

Photographs can be applied to pottery by a process similar to engraving.

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BOTANY

Honors for Longevity Reclaimed by Big Trees

HONORS for greatest age among living things are re-awarded to the Big Trees of western America in a summary study by the late Dr. Hans Molisch, formerly director of the Institute of Plant Physiology, the University of Vienna. Dr. Molisch's book has just been translated and published in English by an American botanist, Edmund H. Fulling, editor of *The Botanical Review*.

The Big Tree's only close competitor for record length of life, in Dr. Molisch's tabulation, is the baobab tree of Africa, which is given an estimated age of 5,000 years. However, this is only an estimate, whereas the equal age of the Big Tree is backed up by actual counts of annual rings in the trunk.

Next in line comes the banyan of India, sacred for having sheltered the Buddha. The identical tree under which Gautama sat when inspiration came to him is still pointed out, and since it has been a holy place during all the centuries, it is quite probable that the tradition is accurate, so that the estimated 3,000-year age of the "bo-tree" is well supported.

Not so well fares the giant cypress of Tule, in Mexico, at which stout Cortez marvelled, and which the famous German traveller, von Humboldt, estimated to be 4,000 years old. "Comparative estimates have indicated, however, that this swamp cypress can scarcely be more than 2,000 years old," says Dr. Molisch; "further proof that estimates

alone easily lead to inaccuracies and exaggerations."

Even more drastic scaling-down in estimates had to be made for the age of the great dragon-trees of the Canary Islands, likewise claimed to be the world's oldest. Dr. A. Putter, who studied these trees critically shortly after the World War, would grant the oldest of them no more than 185 years. The claims of 5,000 or 6,000 years, advanced by natives for their trees, Dr. Putter dismissed as trivial, because the same natives "not infrequently do not know their own ages nor those of their children."

Science News Letter, July 2, 1938

ENGINEERING

High Costs Hinder Adoption Of Large Diesels in U. S.

HIGH costs of construction and of fuel oil have hampered the advance of the large Diesel-powered motorship in the United States as compared with Europe, John E. Burkhardt, chief engineer of the Bethlehem Shipbuilding Corporation, declared.

American businessmen, used to a larger return on invested capital than their European cousins, have hesitated at the higher first cost of the large Diesel.

In addition, the higher cost in United States ports of the type of oil required to fire the Diesel has been a factor tending to discourage their spread.

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