



SUPERFICIAL SUICIDE

Tattooing is a form of self-torture combined with a satisfaction of the desire to show off.

scientific research or his time in the service of the community, his efforts are constructive.

Religion has its very definite therapeutic effect in this connection, Dr. Menninger indicates. For many people, the ritual of the confessional can serve to relieve the overburdened conscience.

Last, but not by any means least, it is necessary for the suicidal patient to build up his capacity for love.

"He who seeketh his own life shall lose it but whosoever loseth his life for my sake shall find it." These words of the Great Physician apply to the suicidal patient, Dr. Menninger said. He who would learn not to destroy his own life must give up some of his self-esteem and invest his love in others.

The making of friends is an art and should be cultivated. If the personality is too weak to cultivate human friendships, develop an interest in music, art, crafts, or some engrossing hobby.

Work, a splendid way of getting rid of hates, is also one of the best and most available means of developing the creative impulses. In social work, teaching, the ministry, medicine, and many another profession and business one may lose oneself in true creative endeavor to the endless benefit of mankind and the restoration of mental health.

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Science News Letter, July 2, 1938

ENGINEERING

Few Simple Rules in Driving Greatly Increase Car Mileage

WHILE motor car manufacturers do everything possible to increase the gasoline mileage of their automobiles, the owner of the car, through proper driving, can also do plenty to decrease his gasoline consumption.

In a report presented to the Society of Automotive Engineers, W. E. Zierer and J. B. Macauley, Jr., of the Chrysler Corporation, cited a recent driving test in Detroit.

A ten-mile course was laid through the city and the same car was driven over the route in two ways. First it was pushed to make the trip as fast as possible while keeping within a 30-mile-an-hour speed limit. All gears were used and speed was the watchword. It took 39 minutes to make the trip and the gasoline consumption was 8.5 miles to the gallon.

Next the same car was taken over the route using best driving practices—such as coasting up to stoplights in neutral, starting in second, accelerating slowly, etc.—which would give economy. It took 44 minutes to make the same trip this way. The mileage was 17 miles to the gallon!

Thus, at a sacrifice of five minutes time, the gasoline economy was improved 100 per cent.

Streamlining is Vain

Streamlining on cars, the engineers showed, was effective only at speeds too high to be used generally. By removable sections they completely streamlined a stock car and found that fuel economy was increased 56 per cent, at speeds of 80 miles an hour. But the gain was only 17 per cent. at 60 miles an hour.

This freak car had an additional, long tailpiece which gave it an overall length some 44 inches greater than normal. "This would be a sad tail indeed for traffic driving and parking," they add.

Thus while streamlining alone will not result in an improvement of existing tank mileage, it will have the result of permitting somewhat higher speed operation without seriously penalizing tank mileage.

Part of the owner's feeling about the mileage his car is yielding is mixed up

with psychology, they pointed out.

A motor car owner, they said, measures economy by the number of times he has to reach for his pocketbook. They cited one case where complaints against poor mileage on a certain make of car were reduced greatly when a larger gas tank was installed.

New Engine Bearing

They are still in the laboratory and you can't buy one for any price, but automotive engineers are now studying a new type engine bearing for automobiles which will stand up after a test run equal to driving 30,000 miles at a speed of 80 miles an hour.

This pioneer, experimental bearing, whose composition is still undisclosed, was discussed by Arthur F. Underwood, mechanical engineer of the Research Laboratories Division of General Motors Corporation.

Tougher, longer-lasting and lower-priced bearings are continually sought, explained Mr. Underwood, because bearing loads are due to increase in the future. Higher octane fuels, supplying more power, and the advent of more Diesel engines are only two trends among many which are today stimulating research on bearings.

The ideal bearing, said Mr. Underwood, should have the following properties:

1. It should have the fatigue resistance of a copper-lead or silver bearing.
2. It should have the anti-friction benefits of a tin base babbitt bearing and the bond and mechanical strength of silver.
3. It should have the conformability, embeddability and corrosion resistance of babbitt metal.
4. It should have the low cost of copper and lead as against tin, cadmium, silver or indium.

Sleeve Valve Engines

Despite its intensive production of orthodox airplane engines for its rearmament program, Great Britain is still continuing experimentation on the sleeve valve engine, which has attracted wide attention in civil and military aviation circles.

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.

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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.

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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."

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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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