

## ENGINEERING

**Use of Glass Fabric As Road Reinforcer Patented**

A PATENT has been granted to one of America's most prolific inventors for a method of reinforcing asphalt highways by the use of spun glass fabric base.

Carleton Ellis of Monclair, N. J., who already has more than 700 patents to his credit and is second only to the late Thomas A. Edison in the number of patents granted him, received Patent No. 2,115,667 for his novel reinforcing method.

Strips of spun glass fabric or of fabric made from similar materials will increase resistance to wear and decrease maintenance cost of asphalt roads if included as a binder, Mr. Ellis declares in the specifications accompanying his patent. He proposes use of the glass fabric in the form of a criss-cross tape or as a cloth.

Cracking from cold and chipping at the edges of cracks are markedly reduced by incorporation of the flexible glass filler, he maintains. The fabric also serves to decrease the flow of soft asphalt on extremely warm days.

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## EUGENICS

**Sterilization Opposed As Way of Bettering Humanity**

PEOPLING the earth with more intelligent, more effective and more socially useful human beings is one of the aims of science. One of the devices suggested for weeding out the defectives is sterilization, practiced in such politically diverse countries as Germany, Denmark and the United States.

The argument for controlled breeding among human beings arises in large measure from the success of biological measures which have led to improved kinds of horses, cows, pigs, dogs and other domestic animals.

But there are those working in science who believe that our present knowledge of human heredity is too scanty to justify too radical action. Prof. J. B. S. Haldane, one of the most brilliant of British biologists, is one of them and his new book, "Heredity and Politics" (Norton) is an exposition of the principles of genetics applied to human problems.

He regards compulsory sterilization "as a piece of crude Americanism like the complete prohibition of alcoholic beverages." Two strong objections to

sterilization cited by Prof. Haldane are the danger of the operation necessary in women and the fact that the demand for sterilization is a symptom of a state of mind that can have unfortunate social consequences.

Sterilization in men is no more dangerous than the extraction of a tooth but in women it is like an appendectomy under favorable circumstances with a probable loss of life of one per cent or less.

The tendency to apply sterilization to those economically not self-sufficient or to those mentally deficient does not appeal to Prof. Haldane as the way to handle these problems. Segregation of mental defectives would answer the biological needs and in his opinion still fulfill our human duty to help and care for the weak.

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## ARCHAEOLOGY

**Did Ancient America Have Its Own Old Stone Age?**

POSSIBILITY that ancient America had an "Old Stone Age" is raised again, with the discovery in New Mexico of crude stone axes strangely resembling handiwork of Europe's primitive Old Stone Age men.

That the unknown Americans, who made the crude implements, were not necessarily as ancient as Europeans of similar culture is plainly stated by Dr. Kirk Bryan of Harvard University, who found a number of the tools in an old quarry in Rio Arriba county.

Discussing significance of the prehistoric tools (*Science*, April 15), Dr. Bryan also says that no direct relationship with European types is implied. The tools do, however, represent a heretofore unrecognized type of ancient inhabitant of this continent, possibly preceding known Indian tribes.

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## ENGINEERING

**Giant Electric Pumps Lift Water Over Mountains**

See Front Cover

THE 12,000-horsepower motor pictured on the front cover of this week's SCIENCE NEWS LETTER is one of six which will drive some of the world's largest pumps. Each high-speed centrifugal pump will lift about 200 cubic feet of water a second over the mountains to Southern California. They are being built by Westinghouse.

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**IN SCIENCE**

## ENGINEERING

**Travel Less Although Motorists Drive More**

ADD this to your list of paradoxes. California motorists burned 87,000,000 gallons more gasoline in their cars during 1937 than they did in 1936, but they traveled less!

What happened, reports Victor W. Killick, chief, Bureau of Statistics of the California Department of Motor Vehicles, is that more motorists consumed a greater total gallonage of gasoline, but individually they travelled less on the average. Thus there was a reduced gasoline consumption per registered vehicle in 1937 compared with the preceding year.

While the decrease was not large per car, it mounts to a large total when multiplied by California's 2,500,000 vehicles. In bulk the decrease means that for California 500,000,000 gallons of gasoline was *not* consumed in 1937 which might have been used had the average motorist traveled as far as he did in 1936.

California has two motor cars for every five persons in the state. The point of saturation for motor vehicles, states Mr. Killick, has nearly or actually been reached.

This saturation has been attained not so much because Californians cannot buy more cars if they wish, but because many motorists feel that driving their cars is often more trouble than it is worth. Increasing traffic accidents are keeping others, through fear, from much driving.

If California is a sample of what may generally become the case throughout the country, Mr. Killick foresees a serious setback to business. He estimates that the automotive and the allied industries are so ramified that at least 25 per cent. of the nation's population will be adversely affected by curtailment of automobile sales and travel. What part tourist travel played in the situation in California is not given by Mr. Killick, for these cars are not registered in the state.

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# E FIELDS

MEDICINE

## Endocrine Maker Brings Suit Against the A. M. A.

A SUIT charging conspiracy and libel and asking \$1,000,000 damages has been brought against the American Medical Association and Dr. Morris Fishbein, Editor of the Journal of the American Medical Association, by Hirstra Laboratories, Inc. of New York, manufacturers of Endocrine, a face cream used by women. Papers were served in Elmira, N. Y., on Dr. Arthur W. Booth, chairman of the board of trustees of the American Medical Association, April 21 and the suit filed in the Supreme Court of New York County, April 22. Max D. Steuer is attorney for the plaintiff.

It is charged in the complaint that the American Medical Association, Dr. Fishbein "and others" entered into a conspiracy "for the purpose of maliciously injuring and destroying the plaintiff's business, good will, reputation, credit and property."

The action is the result of alleged derogatory statements made by the defendants concerning Endocrine, the publication in the Journal of the American Medical Association of a condemnatory editorial and release to the press of an abstract of the editorial. (*SNL*, April 23.)

The plaintiff charges that Dr. Fishbein and the Journal singled out the product, Endocrine, for attack without having examined it; that they ignored medical testimony bearing on the use of estrogenic compounds, including estradiol, the active ingredient in Endocrine, and their beneficial effects in the treatment of women; and that the charges made by the defendants are false and were known by the authors to be false.

It is stated that estradiol has been in medical use for many years.

The complaint charges that the experiment on rats reported in the press release and the Journal's editorial, afforded no reasonable basis upon which an inference might properly and reasonably be made as to the effect of Endocrine on women; that the defendants know that

in the cited experiment the dosage of estradiol administered to the rats was 52 to 546 times the physiological requirements and that if similar proportionate amounts were used by a woman in the application of Endocrine it would require, so as to make a proper comparison, 5,000 times the amount definitely recommended by the plaintiff, or 5,000 jars of the cosmetic a month.

It was known to the defendants, the complaint says, that tests made on rats were not accepted by medical authorities as indicative of the effect of Endocrine on humans.

The defendants, the complaint says, knew that clinical and other tests had been conducted at great length upon human beings with estradiol and other estrogenic compounds over a period of many years and that in no written published medical literature had the claim ever been made that such estrogenic compound, including estradiol, ever caused cancer in a human being.

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MEDICINE

## Sulfanilamide Can Aid In Diagnosing Undulant Fever

SULFANILAMIDE, the chemical remedy which is on everyone's tongue figuratively if not literally, since it is finding such wide medical use, now promises to help diagnosis of and recovery from undulant fever. This is the troublesome and serious illness, long-drawn-out and with many relapses, that comes from drinking milk infected with germs known as *Brucella* organisms.

The discovery that sulfanilamide could help in this illness was made by chance, Drs. Henry Welch, John A. Wentworth and Friend Lee Mickle of the Connecticut State Department of Health reported to the American Association of Immunologists.

The chemical causes an increased ability of the undulant fever patient's white blood cells to eat up the *Brucella* organisms. This should help to speed recovery.

This activity of the white blood cells is specific for these particular germs alone, the Connecticut scientists found. Sulfanilamide caused no such increase in their ability to attack other germs with the exception of certain streptococci and staphylococci which are so widely distributed that most persons have probably developed some immunity or resistance to them.

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PSYCHIATRY

## Role of Glands in Mental Disease Is Still a Puzzle

ONE OF the most puzzling problems faced by the scientist exploring man's mind is the role played by the powerful glands of the human body.

A matter of demonstrated fact is the knowledge that these glands serve as chemical factories, pouring out potent substances capable of changing the whole behavior of the individual. Presence or lack of a glandular chemical may make a person energetic or lazy, submissive or rebellious, mentally alert or stupid.

That the endocrine glands occupy a place of power in determining the mental soundness or illness of the individual has long been suspected by physiologists and psychologists. Glandular disorders have been noted in the mentally ill and to some this has meant that the glands could be blamed for the mental illness. Others, reversing the relationship, see the emotional strains of mental disease as effective in throwing the endocrine system out of balance.

Actually, medical science today has no crucial evidence of any cause and effect relationship between the powerful glands of internal secretion and mental disease or mental deficiency, Dr. Hugh T. Carmichael, psychiatrist of the University of Chicago Medical School, told his colleagues at the recent meeting of the American Association for the Advancement of Science.

A recent survey showed that of a group of about 300 mental patients selected for endocrine diagnosis and treatment more than a third were so improved that they were able to leave the institution. But do not jump to the conclusion that it was gland treatment that saved them. Further analysis showed only 17 per cent of those selected for endocrine diagnosis actually had anything wrong with their glands and less than half of these had adequate gland treatment. In addition many of those "cured" had had a type of mental disease that often disappears spontaneously.

Mental disease and mental deficiencies are common. So also are glandular imbalances. That they are often found in the same individual could be simply a matter of chance.

The role of the endocrines is still an unsolved problem and presents a fruitful field for future research.

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