

CHEMISTRY

Reversible Baldness

►GLASS MADE of paper with its fibers so closely packed that it can filter out radioactive dust in atomic energy installations, synthetic oils that keep on lubricating at both 500 degrees above and 100 degrees below Fahrenheit, a new way of stopping hair from growing, a new synthetic fabric and a way to make a runway out of sand—all these went on exhibit when the Trail Blazers section of the Seventh National Chemical Exposition opened in Chicago.

The National Bureau of Standards developed the glass paper. The job was done specifically to answer the problem found in atomic energy installations of radioactive dust particles in the air. The Bureau says the new glass paper is many times more effective than present commercial air filters.

The Office of Naval Research exhibited, for use in turboprop and turbojet engines, a new synthetic lubricant that will not boil at extremely high temperatures and will not freeze at very cold temperatures. Also shown were four new synthetic lubricants designed for four parts of a 20 millimeter

automatic aircraft cannon. With these, pilots can fire the cannon at temperatures from minus 75 to plus 150 degrees Fahrenheit.

Dr. Peter Flesch of the University of Pennsylvania's department of dermatology showed how too much vitamin A can cause reversible baldness in both animals and humans. Also human sebum leads to reversible hair loss in animals. Dr. Flesch says these findings may provide a chemical approach to common baldness.

Dynel, a synthetic fabric developed by the Carbide and Carbon Chemicals Company, will not shrink or stretch, is resistant to stains, mildew and destructive insects, sheds wrinkles, holds a press, is fire resistant, chemically resistant and can be dyed many colors.

A cheap substance from the concentrated waste of sulfite paper mills helps the Army Corps of Engineers make roads and runways by stabilizing the soil. Briquets of soil treated with this chrome-lignin method were on exhibit.

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time," he said, "the diesel engine has fixed maximum capacity which cannot be overloaded, and this type of locomotive cannot supply even temporarily the large demands for power for rapid acceleration as can the electric locomotive."

Continued research in electrical engineering should help keep electric power cheap. When combined with the latest developments in electric engines, this should make railroad electrification attractive again because of an overall economy, he said.

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Do You Know?

The eye's pupil can decrease its area 80% in three seconds.

Cuba's 1952 record sugar crop of 8,000,000 tons is the largest ever produced in any country.

It took the white man two centuries to spread himself over as much of the United States as the European corn borer has covered in 35 years.

Azaleas, rhododendrons and pyracantha each are attacked by a different kind of lace bug, a prime pest of broad-leaved evergreens.

GENERAL SCIENCE

Role of Engineers

►THE ENGINEER stands about half way between the inventor and the scientist. He is interested more in the results of scientific principles than in the principles themselves.

Speaking at the Centennial of Engineering in Chicago, Dr. W. F. G. Swann, director of the Bartol Research Foundation of the Franklin Institute, Philadelphia, said the scientist, on the other hand, was more concerned with the principles of things than with their consequences.

And the inventor, he said, knows little of the principles. He is guided by an intuitive sense that tells him that certain things work when put together in a given way.

The scientist has mapped out "regions of assured fertility, dubious fertility and al-

most certain sterility," he said. Scientists and engineers explore the first two regions but the inventor works in all of the regions, occasionally finding a new device in the "sterile" region.

One inventor was so successful in producing from the sterile region that his employees hung a sign in his laboratory that said: "The poor fool didn't know enough to know that it couldn't be done, so he went ahead and did it."

Since the engineer is not particularly interested in the principles themselves, he has worked out certain empirical relationships to guide him. But those aids, Dr. Swann said, are being replaced rapidly by fundamentals, especially where electronics and atomic structure are involved.

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ENGINEERING

Trains Pulled by Diesels Believed Temporary

►THE DIESEL engine common to today's railroads may give way to electric engines just as steam engines gave way to diesels, H. F. Brown of the Westinghouse Electric International Co. told the American Institute of Electrical Engineers meeting at the Centennial of Engineering in Chicago.

Mr. Brown said many engineers believe the diesel is an "interim" engine.

"Although its electrical equipment can withstand overloads for short intervals of

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