



**AUTO SNIFF BOX**—In studying the odor of diesel exhaust gas, research engineers at General Motors use a plastic "sniff box," since the human nose is still the primary standard for odors. They are attempting to correlate odor intensity with various chemical changes that occur in exhaust gases of an operating diesel.

## BIOCHEMISTRY

## Color Signals Cancer

► A BRILLIANT ORANGE-RED color and an intense yellow color signal cancer in a new technique for rapid scanning of smears of cells shed from the body.

The technique is an adaptation of the famous Papanicolaou test for cancer. It is reported by Drs. Ludwig von Bertalanffy and Francis and Marianna Masin of Mount Sinai Hospital and Clinic, Los Angeles, in *Science* (Nov. 23).

The "Papa" test, as it is familiarly called, is a test for detecting cancer by showing cancer cells among others shed or washed from the uterus, lung and stomach. The cells are smeared on a slide, stained and examined through a microscope.

The test is widely used for mass detection of cancer, especially in women.

The Mount Sinai scientists find this test can be speeded by using acridine-orange to stain the cells and then examining them under a blue light. The cells stained this way fluoresce and show brilliantly when examined under the microscope.

Normal cells do not show the same fluorescent colors as cancer cells. White blood cells, for example, show brilliantly white-green nuclei.

Further advantage of the method is that the cell nucleus and the cytoplasm of the cell stain differently. The cytoplasm of a cancer cell shows the brilliant orange-red color, the nucleus an intense yellow fluores-

cence and the nucleolus within the nucleus a brilliant orange-red.

The brilliant colors of the cancer cells show up even under a low power microscope.

Besides its value for speeding cancer detection, the new technique promises, the scientists say, "increased insight" into the cell chemical changes leading to cancer.

Science News Letter, December 8, 1956

## HEMATOLOGY

## Find Sugars in Blood Group A Substance

► HUMAN BLOOD GROUP A substance has been studied chemically and found to be a nitrogen-containing disaccharide.

Ordinary table sugar and milk sugar belong to the disaccharide class of sugars.

By heating human blood group A substance with acid, scientists at the Lister Institute of Preventive Medicine, London, extracted five disaccharides that contain nitrogen. In further tests, including some with human anti-A serum, the scientists pinned the substance that is blood group A fairly closely to a chemical called O-alpha-N-acetyl-d-galactosaminoyl-galactose.

The studies are reported by Drs. Raymond H. Cote and W. T. J. Morgan in *Nature* (Nov. 24).

Science News Letter, December 8, 1956

## HEMATOLOGY

## Normal Blood Standards Called High for Women

► THE NORMAL AMOUNTS of red blood cells and hemoglobin expected in the blood are too high for women, Dr. Harriet Emigh Judy, of Spokane, Wash., reported to the American Medical Association clinical meeting in Seattle.

She said that many of her otherwise normal female patients would be considered anemic by present standards.

She tried all the standard treatments for increasing the levels, such as supplying more iron, vitamins, liver and other combinations, but nothing succeeded in bringing the levels up to the accepted value. Yet all other examinations and tests were normal.

After reviewing more than 7,000 women's charts and selecting 663 "normal" ones, she found that blood and hemoglobin counts both were below the accepted standards. Her normals showed a red blood cell count of 4,370,000 and a 12.5 gram hemoglobin level, while the standards are an average of 4,850,000 for red count and 13.8 grams for hemoglobin level.

Dr. Judy said this was the first time a physician with adequately trained laboratory personnel had analyzed consecutive case records to determine what was normal for women, but it will probably take time to change the accepted standards.

Technician Norene Price worked with Dr. Judy in the study.

Science News Letter, December 8, 1956

## ASTRONOMY

## Clouds on Venus Are Ground-Up Dust

► THE CLOUDS on Venus contain "great amounts of dust, ground off the rocky surface of the planet."

This conclusion concerning the composition of the cloud veil surrounding Venus by Dr. E. J. Opik of Armagh Observatory, North Ireland, disagrees with that of two U. S. astronomers who believe the clouds are water vapor.

Dr. Donald H. Menzel, director of Harvard College Observatory, and Dr. Fred L. Whipple, director of the Smithsonian Astrophysical Observatory, Cambridge, Mass., have reported that the water vapor had not been detected because of Venus' low temperature.

Dr. Opik argues that if the clouds were water vapor, they should be white. Photographic measurements show the cloud veil is distinctly yellow.

The temperature on Venus, Dr. Opik says, is much higher than has been thought. Instead of the very low 38 degrees below zero Fahrenheit recently adopted, Dr. Opik believes that about 111 degrees Fahrenheit is more likely.

This value, given by Dr. Opik in the *Irish Astronomical Journal*, rests on certain assumptions still to be proved, it is reported in *Sky and Telescope* (Dec.).

Science News Letter, December 8, 1956