

American Chemical Society, Prof. Wilder D. Bancroft and John E. Rutzler, Jr. of Cornell point out that the anthocyanins vary in color from red or purple through blue and green to yellow. The specific shade in any particular plant appears to depend on the acidity of the sap in the plant.

The development of anthocyanins appears to be due to plant enzymes. If you could inactivate the enzymes without killing the leaves it would be possible to prevent the development of red in leaves. Or, in contrast, if the Norway maple could get the proper enzyme its leaves would turn red in the fall.

Expose a red flower to ammonia vapor, state the scientists, and the blue in

the flower is apt not to be permanent in the absence of a stabilizer. If it changes fairly rapidly to yellow one gets no blue but only green. If it changes very rapidly to yellow one gets neither blue nor green. The leaves of a poinsettia are a case of this.

It seems probable, the scientists add, that all blue flowers contain a color-stabilizer. Sodium chloride, sodium nitrate and alum solutions are reported to stabilize the blue in particular cases.

No systematic study of other stabilizers for blue in flowers appears to have been made, but efforts seem worthwhile in this direction for out of it would come, conclude the scientists, "the production of blue roses."

Science News Letter, December 3, 1938

ducing secondary barytrons (heavy electrons) must be much more penetrating than photons. This high penetrating power suggests their identification with the neutretos (neutral particles having mass and other properties similar to the barytron) postulated by Heitler."

Ray Variations Explained

WORLD-WIDE variations of cosmic ray intensity can be explained by the presence of a great ring of electricity whirling around the earth, far out in space.

This ring of electricity is the same mechanism which can account for the drop of cosmic ray intensity that occurs during severe magnetic storms, said Dr. S. E. Forbush, of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, to the Society.

Electrical rings, Dr. Forbush added, were first postulated by the Norwegian scientist Dr. Carl Stormer to explain certain characteristics of the aurora.

The magnetic effect of the current in this ring of electricity, plus the magnetic effect of the earth's permanent magnetic field, would be expected to have a result equivalent to an increase in the earth's magnetic field. Such an increase in turn, would account for a decrease in cosmic ray intensity.

World-wide cosmic ray variation, Dr.

PHYSICS

High Altitude Research Finds Evidence For Neutretto

This Newest Particle Has Mass and Other Properties Of Mesotron But Is Without Any Electrical Charge

HIGH altitude research at 14,200 feet has led to the identification of what physicists believe will be still another atomic particle known as the neutretto. The newest particle is without electrical charge and has the mass and other properties of the heavy electron.

The latter has been known by a variety of names, including barytron. Recently Nobelist Dr. Carl D. Anderson and Dr. Seth D. Neddermeyer of California Institute of Technology suggested still another name—the mesotron—for the heavy electron, in order to bring some order out of the chaos of nomenclature for this intermediate mass particle. (See *SNL*, Nov. 26)

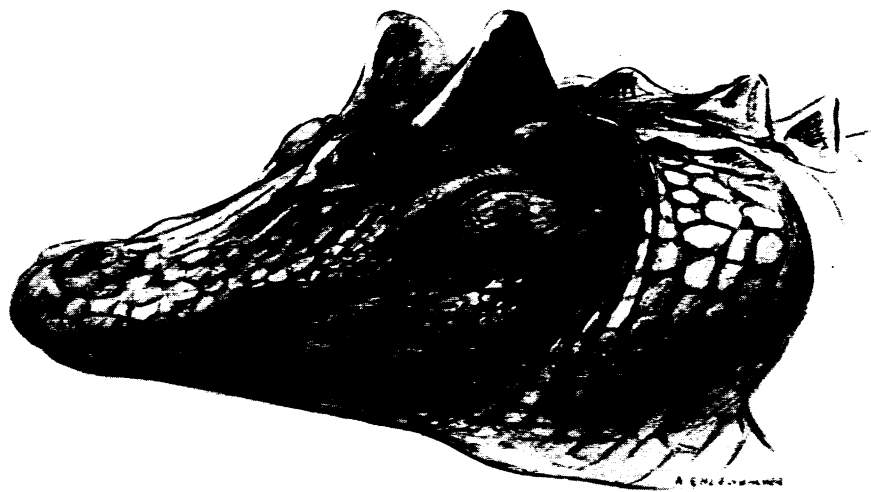
Mention of the discovery was made in the report of Francis R. Shonka of Chicago and De Paul Universities to the meeting of the American Physical Society. Mr. Shonka's report was introduced to the Society by Prof. Arthur H. Compton, University of Chicago Nobelist.

The new research, leading to the discovery of the particle, consisted of measuring cosmic ray intensity at high altitudes when various thicknesses of lead were placed in several selected positions about the four Geiger-Muller detecting tubes.

Great thicknesses of lead were required to bring out the maximum ob-

served effects. Says the Shonka report:

"In view of the great thickness of lead required to give the maximum effect, these non-ionizing particles pro-



WITH A SMILE

This extinct reptile, new to science, was probably not quite so friendly a creature as the artist here presents him in a drawing based on the fossil skull. The horned crocodile was discovered by the Field Museum Paleontological Expedition to Colorado, and is described in a new publication by Karl P. Schmidt, curator of reptiles and amphibians. The age of the reptile is given as paleocene, which makes it approximately 55 million years old.

Forbush explained, can be accounted for by the radius of the electrical ring of current and by the amount of current flowing in it.

Cosmic Rays' Origin

A COMPARISON of all available data on cosmic ray intensities in relation to star, or sidereal, time shows that cosmic rays apparently originate within the same galaxy of stars as that which contains the earth and the sun, Prof. A. H. Compton and Dr. P. S. Gill of the University of Chicago told the meeting.

There is no evidence, they said, to indicate that the earth is moving appreciably with respect to the source of cosmic rays as would be the case if the rays came from outside the local galaxy.

Science News Letter, December 3, 1938

POPULATION

Removal to Empty Places No Solution For Jews

COLONIZING exiled German Jews in the world's empty lands is not regarded as an adequate answer to the problem presented by the Nazi pogrom by population scientists gathered for the meeting of the American Philosophical Society.

Two leading population experts, Dr. Warren S. Thompson, director of the Scripps Foundation for Research in Population Problems at Miami University, and Dr. Frank Lorimer, secretary of the Population Association of America, when interviewed separately expressed almost identical views. In a word, they said it would be sheer human waste to take these highly urbanized people and dump them in empty places where their training could find no outlet under the pioneer conditions that would necessarily prevail.

"They are city people and the only places to which they can be successfully transplanted are cities," was the consensus of opinion expressed. Many are highly trained professionally, others are clerical workers or business men.

Civilization should find niches in already established centers into which they can fit rather than shoving all these neatly squared pegs into round holes.

It was felt that considerable numbers of the exiles could be absorbed into the American population to this nation's great advantage. But they recognized the difficulties of lifting quota limits and possibly of overcoming local opposition, especially while there is still much unemployment in the land.

Science News Letter, December 3, 1938

PUBLIC HEALTH

Winter Colds May Protect Against Infantile Paralysis

THE SNIFFLY colds that plague you all winter may be protecting you against "sleeping sickness," or encephalitis, and infantile paralysis—at least till summer comes and banishes the sniffles.

The possibility of this protective action of colds and other wintry infections of the breathing apparatus was discovered by Dr. Charles Armstrong of the U. S. National Institute of Health.

The discovery is important in two ways: It may explain why "sleeping sickness" and infantile paralysis, unlike scarlet fever, influenza and diphtheria, come in summer instead of winter; it suggests a new approach to the problem of influenza prevention.

Dr. Armstrong made his discovery in studies of mice, and he is careful to point out that since we are men (or women) and not mice, the findings may not hold for us, but they are important enough for further study.

It appears that the more or less constant presence in our noses all winter of germs of colds and related ails causes a mobilization of large numbers of germ-fighting white blood cells in the nasal tissues.

Although these germ-fighters are mobilized to fight cold germs, they may also be able to check any invasion of "sleeping sickness" or infantile paralysis viruses. With the return of warm

weather and the decrease in colds, influenza and the like, the armies of white blood cells presumably are demobilized, leaving the nasal tissues less well-guarded and giving the encephalitis and infantile paralysis viruses a chance to get past the barriers and travel along the nerves to the brain.

Dr. Armstrong found this mechanism in the case of mice—not men as yet, nor even monkeys—by injecting ordinary germs into mouse noses and following up this semi-vaccination with injections of "sleeping sickness" virus. The semi-vaccination worked not only to protect the mice against encephalitis but it also protected against small doses of influenza virus.

The results in the 'flu studies suggest, Dr. Armstrong states, either that there was a tendency for the influenza virus to be prevented from multiplying, for it to be neutralized or destroyed in the nasal passages or, more probably, for it to be prevented somehow from spreading to the lungs of the mice.

Dr. Armstrong would not say that this gave any hope of a new method for preventing influenza. Further investigations seem likely, although Dr. Armstrong himself has had to interrupt these studies to investigate the new health menace of horse-acquired encephalitis.

Science News Letter, December 3, 1938

PHYSICS

Electrified Sand May Be Used In Atom Smashers of Future

A SWIFT-FLYING spray of electrified sand may be used in the future to build up the enormous electrical voltages needed for smashing the atom.

This is the suggestion of Dr. W. H. Wells, in charge of nuclear research at Westinghouse Research Laboratories. (*Journal of Applied Physics*)

Although Dr. Wells is himself constructing a giant electrostatic type of atom smasher, he foresees the day when a size limitation will be reached because of the increasing length of the belts which carry many small electrical charges up to

giant high-potential storage spheres.

If belt-type voltage generators ever reach this limit, Dr. Wells suggests, it will then be possible to carry up the electrical charges by putting them on grains of sand and blowing this man-made sandstorm against a metal collector at the high voltage terminal.

The sand could be charged by passing it through an ionized region just as is done now in the electrical type of smoke precipitator devised by Dr. F. G. Cottrell.

Science News Letter, December 3, 1938