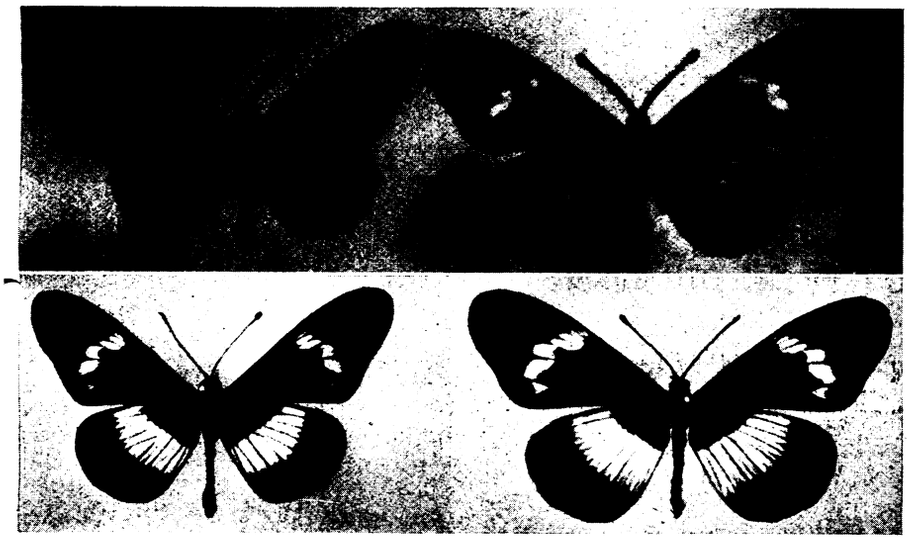

BUTTERFLIES IN TWO WORLDS

Bottom—a male butterfly, left, and his mate, as they appear to man. Top—the same insects as they probably appear to other butterflies. Both are black and white photographs, the top picture being taken with sunlight from which all colors, except ultraviolet, had been screened.

ENTOMOLOGY

Ultraviolet Light Reveals Strange World to Insect Eyes

ULTRAVIOLET, invisible to human eyes, is visible to the eyes of insects, but red, visible to us, is not a color to them. This radical difference in color vision gives the world a vastly different appearance to insects.

How insects may look to each other through their ultraviolet-seeing eyes was demonstrated at the meeting of the American Association for the Advancement of Science, by Dr. Frank Lutz and Richard Burlingame of the American Museum of Natural History. The two entomologists displayed a series of butterfly and moth photographs taken by ultraviolet light, together with a specially prepared scale of ultraviolet "color" values.

The ultraviolet pattern of an insect may or may not correspond to the pattern we see on it by visible light. One specimen displayed had spots on its wings that are red to human eyes, and hence invisible to insect eyes. But the same spots are rich in ultraviolet, and hence visible to insects by that radiation. In other species, the ultraviolet spots overlap areas that by visible light have several different hues.

Male and female butterflies may have the same ultraviolet value, but in some species the sexes differ. Where they do, it is usually the female that is "brighter" by ultraviolet. One common butterfly species has two entirely different kinds of females, one being yellow like her mate, the other entirely lacking in that color. But these "blonde" and "brunette" sisters are alike under the ultraviolet: except for small faint spots they have no ultraviolet "color" at all. They probably look alike to the male, which sees yellow poorly if at all.

One of the most interesting of the displays was of a common species exhibiting the phenomenon known as mimicry. There are several different forms of females, each differing in color pattern from the male but resembling some "protected" species. This is supposed to fool preying birds and lizards. In the display, ultraviolet photographs of "mimics" and "models" were shown together. They appear even more alike by ultraviolet than they do by ordinary light. Thus their mimicry extends into a field where it may have no practical value, because while the ultraviolet-seeing powers of birds and lizards have not been well investigated, they probably do not see by these short waves.

Science News Letter, December 31, 1932

PUBLIC HEALTH

Black Rat Brings Plague Danger to Britain

LONDON medical scientists fear that a plague epidemic may break out there sooner or later if present conditions continue. The calamity, if it comes, will be the result of interfering with nature's biological balance. This feeling is crystallized by Dr. W. Langdon Brown, Regius Professor of Physic at Cambridge University.

The plague-carrying flea lives on rats, but black or dark rats are a worse plague menace than brown ones. In Britain black rats are gradually increasing. If they are allowed to continue to multiply a plague epidemic in London is likely to follow. In big cities such epidemics tend to break out as soon as carriers of the germ become sufficiently numerous.

London's freedom from plague epidemics since the "Great Plague" of 1664-5 has been due to the dominance of the brown rat, which came to England on ships, bred very rapidly and almost exterminated its natural enemy, the black rat. During recent years, however, there have been so many campaigns against rats in general that millions of the brown rats have been destroyed. The race of black rats has thus been able to make headway.

Science News Letter, December 31, 1932

EDUCATION

Gifted School Children Younger Than Average

GIFTED CHILDREN in high school average about two years younger than their schoolmates, Dr. Edna E. Lamson of the State Normal School at Jersey City reported. Dr. Lamson told of her investigation at a meeting of the American Association for the Advancement of Science.

School careers of 56 children with intelligence quotients above 127 were followed, and compared with careers of rank and file high school students.

"Gifted children in senior high school maintain a high scholastic achievement throughout the course," Dr. Lamson stated. "They make a scholastic record that is significantly superior to the rank and file of high school pupils who are two years older, and receive a disproportionate share of scholastic honors."

Science News Letter, December 31, 1932