Monogamic

IN the good old romantic days we used to think that birds mated for life. Then some callous destroyer of illusions made the claim that they not only change mates every spring when they come north again, but that they divorce and marry other spouses when the time comes to raise the second of the two broods of young which most birds bring up each year. To get at the real facts in the case, Mrs. Margaret Morse Nice, of Columbus, Ohio, tagged a lot of birds with little numbered bands around their legs and studied them for several seasons.

"Five pairs of three species shifted mates in one season, but in twenty pairs of eleven species there was no change," she said. "The species that changed were brown thrasher, house wren and bluebirds. The species that did not change were phoebe, junco, chipping sparrow, field sparrow, song sparrow, towhee, cardinal, catbird, house wren, robin and bluebird.

"Both house wrens and bluebirds leave the nesting site for a period after one brood is raised. Brown thrashers appear to make a definite new start for the second brood, for the male resumes singing for a few days at this time.

"Many species, however, stay continuously on their territories and moreover their nesting cycles overlap. Female song sparrows, robins, cardinals and migrant shrikes have been watched building new nests while still feeding young of the first brood. In such cases the seeking of new mates is impossible."

Ornithology

Science News-Letter, January 11, 1930

Scientific Consultants

Announcement that the Library of Congress is adding to its staff of consultants two scientists has just been made by Col. Lawrence Martin, chief of the division of maps at the library. As the scientists chosen are two well known geologists and geographers, the announcement was made before the Geological Society of America.

The appointees are Prof. Alfred C. Lane, of Tufts College, and Prof. Albert P. Brigham, of Colgate University. Since the Library of Congress has a famous map collection, it is a mecca for specialists and inquirers at large who are interested in geography and geology, and the appointment of scientists from these fields is regarded as especially fitting.

Having research consultants at the library represents an innovation, Col. Martin said. The corps of consultants already named for this year includes specialists in economics, European history, philosophy, and various fields of literature. A specialist in church history, Prof. Charles S. Lane, has just been added.

General Science

Science News-Letter, January 11, 1930

Amateur

Not all the work of the Weather Bureau is done by professional meteorologists. At the meeting of the American Meteorological Society, Clarence J. Root of the Weather Bureau station at Springfield, Ill., paid tribute to the work of the cooperative observers. There are about 5,000 of these volunteer workers, he said, some of whom have served continually for 40 years, furnishing records that have proved of use not only to meteorologists, but also to engineers, agriculturists, manufacturers and business men.

Meteorology

Science News-Letter, January 11, 1930

What Freshmen Do

Approximately eighty per cent. of the average college freshman's time is spent in eight activities, according to Dr. Richard S. Uhrbrock of Cornell University, speaking before the American Association for the Advancement of Science. These activities, in order of time occupied, are sleeping, attending classes, studying, eating, working for pay, walking, physical exercise, and "bull sessions." For the benefit of the uninitiated, the last named may be described as periods of informal conversation in which the undergraduates discuss every subject under the sun. These sessions usually are held in students' rooms, or in fraternity houses. Faculty members are seldom present.

In a study of the distribution of time for one week, made by Dr. Uhrbrock at Cornell, it was found that the typical college freshman spends approximately one-third of his time in sleep, one-third in work activities, and one-third in social, play and personal pursuits.

When students who made high grades were compared with those who were failing, it was found that the high scholarship men had the following general characteristics. They spent *more* time in class attendance, studying at home; in library work; on class and fraternity committees; writing reports and themes; walking or riding to and from classes; in remunerative work; reading newspapers, magazines, novels; on family duties; listening to visiting lecturers; keeping record of use of time. They spent *less* time in conferences with instructors; in physical exercise; attending movies, plays and concerts; on parties, dates and dances; card playing; automobile riding; "bull sessions"; shopping; telephoning; at meals; bathing, shaving, dressing; sleeping.

Sociology

Science News-Letter, January 11, 1930

IN VARIOUS

Discriminating

Some animals have a sense of taste just as critical and digestive organs just as sensitive as those belonging to human beings.

That is what B. B. Mundkur and R. L. Cochran, of the Iowa Agricultural Experiment Station, found when they tried to make farm animals eat scabby wheat.

Barley diseased by scab is unpalatable to humans. And next to humans, guinea pigs like it least. They simply will not eat it. Even a half diet makes them lose weight, it was found.

Of course, hogs will eat—until they become nauseated. And then they would rather starve than eat the stuff.

Two-weeks-old chicks showed a loss of weight and their plumage roughened when fed on the diseased grain. Their elders didn't seem to mind it. But both the young and old chickens, since they were not given an exclusive diet of barley, picked their feed over carefully and rejected much of the diseased grain.

Cattle, sheep and poultry suffer no ill effects from eating scab-infected barley.

Zoology

Science News-Letter, January 11, 1930

Mustiness

A study of the bacteria that cause the peculiarly unpleasant musty odor sometimes found in eggs was reported to the Society of American Bacteriologists by Max Levine and D. O. Anderson of Iowa State College. These scientists were able to isolate from the eggs the organisms causing the mustiness. Characteristics of the organisms were described at the meeting.

The development of mold on the shells of eggs in cold storage depends on conditions surrounding the

SCIENCE FIELDS

eggs previous to storage, L. H. James and T. L. Swenson of the U. S. Bureau of Chemistry and Soils reported at the same session. Chief among these conditions was shipment of eggs in unseasoned wood.

Experiments were conducted in which different lots of eggs were subjected to the following treatments: sweated, shipped in cases of green or partially seasoned wood, with dampness in flats and fillers, washed, oil-protected, and untreated for controls. Half of each such lot was inoculated with a mold-forming organism, and then all the eggs were placed in the regular cold storage. Periodic examinations of the eggs showed that only the eggs in cases made of unseasoned wood developed the characteristic black colonies of the mold. Eggs shipped from California to New York in cases of unseasoned wood likewise showed definite pin-spot molding on arrival in New York and in subsequent cold storage developed the mold to a marked degree, the scientists found.

Bacteriology
Science News-Letter, January 11, 1930

Twins

Twins may be so confusingly alike that they can scarcely tell themselves apart, but their finger prints may be depended upon to identify each, studies by Prof. H. H. Newman of Chicago University demonstrate.

Prof. Newman has finger-printed 100 pairs of twins and in no cases were the prints enough alike to puzzle an expert. Finger prints of identical twins, that is, the type of twins that are practically duplicates of each other, are frequently strikingly similar, but never identical, he emphasized. Fraternal twins, that is, boy and girl twins or other pairs not identical in appearance, are not even strongly similar, so far as finger prints go.

Anthropology
Science News-Letter, January 11, 1930

Stone Head

A great stone, naturally shaped like a human head and carved with teeth, ears, eyes, and flattened chin, is a strange new discovery from Texas, unearthed from its resting place beneath sixteen feet of undisturbed gravel.

Dr. E. H. Sellards, geologist of the University of Texas, brought news of the discovery to the Paleontological Society. The stone head appears to be a new piece of evidence than man existed in America in ancient times.

Judging by the geological conditions of the region, the stone must have lain in place while the gravel from nearby streams washed over it forming finally a layer more than sixteen feet deep, Dr. Sellards said. The streams have long since ceased to wash gravel over the site. The stone weighs at least 75 pounds, possibly 100, he reported.

Archæology
Science News-Letter, January 11, 1930

Not Exact

The old belief, widely held at the beginning of the recent great industrial development, that all science could be calculated with mathematical exactness no longer holds true, W. A. Shewhart, of the Bell Telephone Laboratories, believes. He told the American Association for the Advancement of Science that scientists now do not expect to make a thing exactly as they want it, and that they will revise their methods to make better use of this new knowledge.

Mathematics
Science News-Letter, January 11, 1930

Trout Food

The Loch Leven trout which were introduced into the waters of the Black Hills of South Dakota thirty years ago have a comparatively limited range of preferences in diet. Examination of the stomach contents of a considerable number of the trout by Richard C. Zalesky and E. P. Churchill of the University of South Dakota showed that the young stages of just four kinds of insects constituted by far the bulk of the fishes' food.

Icthyology
Science News-Letter, January 11, 1930

Light for Singing

Just how much light does a robin require, to keep on singing at the end of day?

That is one of the problems which Dr. Jesse M. Shaver and Miss Ruby Walker, of the George Peabody College for Teachers, Nashville, set for themselves. With an illuminometer they measured the amount of daylight still left when the last bird sounded his last note.

Some robins will keep on singing until it becomes totally dark, they reported. Others stop when the outside illumination still amounts to ten foot-candles. This is equivalent to about one-tenth that of an ordinary daylight-illuminated office or schoolroom.

Ornithology
Science News-Letter, January 11, 1930

Rare Sugar

Xylose, a sugar so rare that it has heretofore been a laboratory curiosity at $100 a pound, can now be turned out cheaply at a few cents a pound, requiring no raw material other than waste cottonseed hull bran, water and sulphuric acid. At the meeting of the chemistry section of the American Association for the Advancement of Science, Warren E. Emley of the U. S. Bureau of Standards, described the process by which seed waste is changed into sugar.

Xylose is different from its nearest neighbors in the sugar world, the hexoses or glucose type of sugars, in that it contains five carbon atoms to the molecule instead of six. Because it has always been so rare and expensive, it has never been possible to perform any extensive experiments with it, and consequently it has no known uses. But the experimental plant at Anniston, Ala., can turn out a hundred pounds a day, and when larger units are built they will have an annual production of about a million tons of cottonseed hull bran to work on. So that if xylose has any uses it should not take long now to discover them.

Mr. Emley suggested that it might be used directly in food products, or possibly industrially as a raw material for alcohol, acids and other chemicals.

Chemistry
Science News-Letter, January 11, 1930

Vibration

A well-constructed office building has little to fear from earth vibrations caused by heavy traffic, Prof. C. C. Williams, of the University of Iowa, told members of the American Association for the Advancement of Science.

"Man's senses usually exaggerate the vibrations caused by street traffic, passing trains or rotating machinery," said Prof. Williams. "A movement of only one-thousandth of an inch ten times a second seems a rather violent shaking to ordinary senses," he explained. "Even the little street vibrations cause pictures to become askew on the wall and make dishes move because there is a more rapid movement in one direction than in the other."

During an earthquake the amplitude of the vibrations seldom exceeds a fraction of an inch, the speaker pointed out.

Engineering
Science News-Letter, January 11, 1930