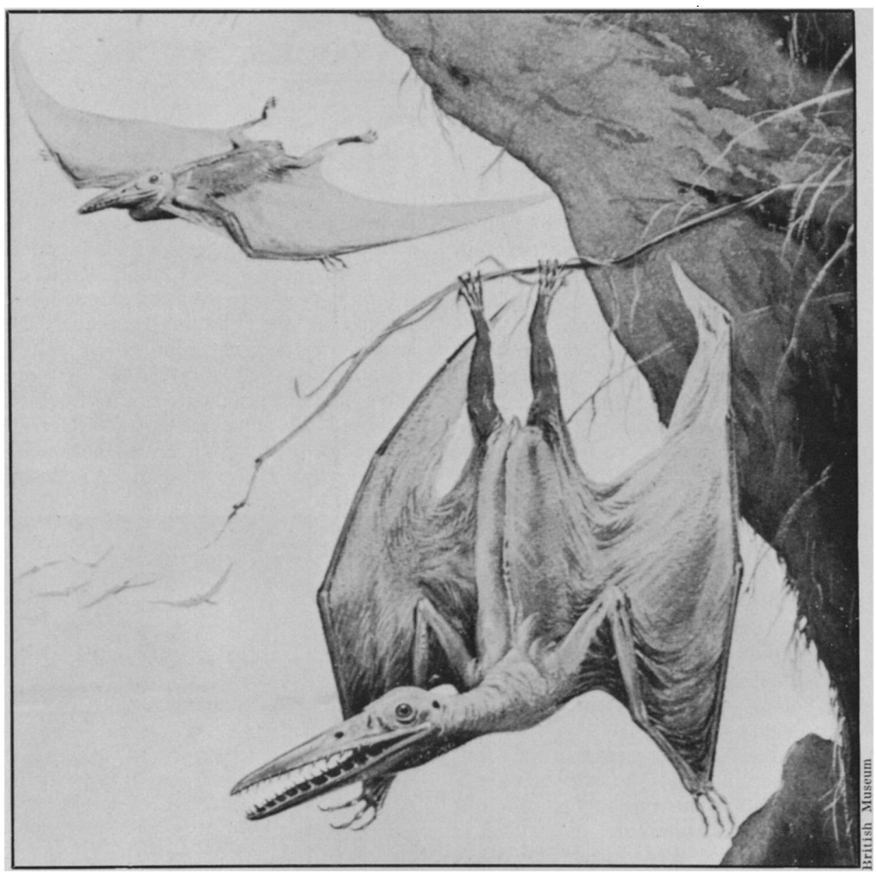
The largest flying creature

The fossilized remains of what may be the largest flying creature that ever lived—a true monster of the skies believed to have spanned a prodigious 15.5 meters, wider than most executive jets—have been unearthed in the Big Bend National Park in western Texas.

The bones, which date from the Late Cretaceous period about 63 to 70 million years ago, were actually discovered in the summer of 1971, but they were so huge that University of Texas graduate student Douglas Lawson assumed he had stumbled onto the remains of a land animal. Previously known pterosaurs, or flying reptiles, reached wingspans of little more than nine meters. Several paleontologists, however, confirmed that the huge bones (the radius, equivalent to a lower-arm bone, was 67 centimeters long), hollow and light in weight despite their size, were those of a flying creature.

Since then, Lawson has found two more pterosaurs in the same region, both of them smaller but belonging, as does the monster, to what he believes to be an entirely new genus. The latter find, discovered last spring, showed a complete wing, as well as a femur and some cervicals, and may turn out to be a complete skelton, although it is not of the imposing size of the original example. Next week, Lawson, now working on his doctorate at the University of California at Berkeley, will return to the Big Bend to dig it out of its hillside, aided by Wann Langston Jr., director of the University of Texas Memorial Museum. Even if it is only half complete, the skeleton should make possible a more reliable estimation of the size of the giant, whose remains include only a humerus and partial radius, proximal carpal, distal carpal, metacarpal, first phalanx and second phalanx.

There are several ways of estimating wingspan from such remnants. Comparing the length of the humerus with wingspan in a better-known genus such as *Pterodactylus antiquus* and simply enlarging the numbers, Lawson says, yields a wingspan for the monster of only 11 meters. But, he points out, as with most flying creatures, as pterosaurs grew larger and heavier, they needed a proportionately greater increase in wingspan to keep them aloft. It is such an expansion of measurements from the smaller Big Bend specimens that suggests 15.5 meters. In fact, he says, beyond individual growth patterns, this effect seems to be still greater among large types of pterosaur. If that is true, the wings of the Big Bend behemoth could have stretched a mind-boggling 21 meters—almost 69 feet.



Prehistoric predators, ponderous pterosaurs scan the Late Cretaceous sky.

The intermediate find, unearthed in the spring of 1972, included enough wing parts to suggest only a six-meter wingspan. However, it included enough mandibular structure to suggest jaws a full meter in length, although, reports Lawson in the March 14 SCIENCE, apparently without teeth.

Despite the lack of teeth, Lawson believes—and this may turn out to be the most controversial aspect of the new genus—that the newly discovered pterosaurs may have been carrion-eaters. Most pterosaurs are thought to have subsisted on fish, living on shore and flying out to prey on the teeming denizens of the primordial oceans. All three Big Bend specimens, however, were found at least 400 kilometers from the nearest Late Cretaceous seacoast. The monster itself was found in what would have been a stream bed, and not far from an ancient flood plain, but neither environment, says Lawson, would have provided sufficient bounty for such a titan. Nor, he believes, were there enough insects, the other supposed diet for some pterosaurs.

Whatever they ate, all three specimens were found in nonmarine sediments, a rarity for pterosaur remains, and, Lawson says, unique in North America, suggesting that future pterosaur-hunters may now have wider ranges to explore. The monster may also indicate a need for reexamining pterosaur classifications, since previously found wing structures thought to indicate a given genus may instead have evolved in response to sheer size. □

Sex differences in reading words

Females may perceive words differently, and thus read differently than males, three British psychologists conclude in NATURE (253:438). In three tests with college-aged students, Max Coltheart, Elaine Hull and Diana Slater investigated whether females and males read phonetically (by sounding words out) or visually (recognition by spelling), and if the difference is sex-related.

To study tasks that are purely visual or purely verbal, the team asked 75 British undergraduates to mentally tabulate the number of letters from A to Z containing the sound "ee" to test use of verbal aid. Writing or speaking during the test was prohibited; speed in answering was encouraged. A similar task to test visual aids in reading required the group of respondents to mentally count the number of letters