Dinosaur digit dilemma described in Nature News and BBC News 17 June 2009, and *Nature* vol. 459, p940, 18 June 2009. If theropod dinosaurs evolved into birds their upper limbs had to change into wings, but studies of their hand bones indicate their finger bones are different from those of birds. Birds do not have fingers, but during embryological development five growth centres appear as if they were going to grow into a hand, but only numbers 2, 3 and 4 keep growing, and these fuse together to form the end of the wing. Palaeontologists believe dinosaur hands developed from digits 1, 2 and 3 so there had to be some kind of shift in the pattern of development during evolution.

Chinese palaeontologists have now found a dinosaur they claim is the link in the evolutionary chain from dinosaur to bird hand because it seems to have “a reduced first digit and a metacarpal (hand bone) at the base of the second digit that matches those found at the base of the first digits in tyrannosaurids and dromaeosaurids.” The fossil was found in Jurassic rocks of the Junggar Basin in western China, and has been named *Limusaurus inextricabilis*. It is dated as 156 to 161 million years old and is considered to be an early theropod, i.e. an ancestor of the dinosaurs that are believed to have evolved into birds. James Clark of George Washington University, one of the researchers who studied the fossil described it to BBC News: "It's a really weird animal - it's got no teeth, had a beak and a very long neck, and very wimpy forelimbs."

He and his colleagues suggest theropod dinosaurs actually "had digits 2, 3 and 4, but that these have long been misidentified as digits 1, 2 and 3". Kevin Padian, palaeontologist at the University of California, Berkeley commented: "I think it far more likely that this new animal just has an oddly reduced hand.” He went on to say: "It is equally reasonable that we are just dealing with another odd possibility of evolution."

BBC

Editorial Comment: James Clarke’s and Kevin Padian’s comments together probably best explain the unusual hands of this dinosaur. Its forelimbs seem to be disproportionately small and weak for its body size, which means they could be the result of a defect in development and the hands are deformities rather than the norm for this kind of dinosaur. Dinosaurs with other types of disease processes such as arthritis and cancer have been found, so it is quite possible that some dinosaurs suffered from developmental defects. Whatever the explanation, this creature was very clearly a dinosaur and not a bird, and the only reason anyone would think it had any connection with birds is a prior belief that dinosaurs turned into birds. (Ref. reptiles, aves, embryology, teratology)

Evidence News, 5 August 2009