

an Early Pleistocene dispersal from the Siwaliks Hills via the so-called Siva-Malayan route. It is not clear if the dispersal of *Gavialis* from the Indian subcontinent to Java necessarily required the crossing of salt water barriers, but the possible occurrence of *Gavialis* remains in Sulawesi and Woodlark, two islands located east of the Huxley and Wallace lines that were never connected to the mainland, can be explained by inferring a marine dispersal. According to the present knowledge of the past distribution of *Gavialis*, this genus originated in the Indo-Pakistani area in the early Miocene and during the Quaternary dispersed to the Sunda region, possibly reaching western-most Oceania.

Submitted Articles

POSSIBLE CONSUMPTION OF CORN BY AMERICAN ALLIGATORS AT WILDLIFE FEEDERS IN LOUISIANA, USA. American alligators (*Alligator mississippiensis*) are generally assumed to be obligate carnivores, although plant materials such as fruits, seeds and vegetation have been found among stomach contents (Dowler 1846; Kellogg 1929; Chamberlain 1930; McNease and Joanen 1977; Platt *et al.* 1990; Forkner 1996). The presence of these items is usually attributed to accidental ingestion during prey capture or secondary ingestion [ie the acquisition of items contained in the gut of primary prey (Neill 1971)]. However, Brueggen (2002) observed captive alligators deliberately consuming wild grape (*Vitis* sp.), elderberry (*Sambucus canadensis*), and citrus (*Citrus* spp.) fruit directly from plants, eating fallen fruit below citrus trees, and consuming squash (*Cucurbita* spp.) provided for tortoises inhabiting the same enclosure. Observations of frugivory among wild alligators are rare, which is not surprising given that foraging is often nocturnal and takes place underwater or among dense aquatic vegetation. Nonetheless, *Annona glabra* and *Opuntia* spp. fruits are said to be consumed by wild alligators in Florida (Ridley 1930) and Texas (Vosburgh 1949), respectively. We here report additional observations of possible frugivory by wild alligators.

On two different occasions wild alligators were photographed with motion-sensitive trail cameras at automated wildlife feeders baited with corn (*Zea mays*) in Louisiana, USA. Automated wildlife feeders dispense grain at timed intervals and are widely used by sport hunters to attract game animals in the southern USA, particularly white-tailed deer (*Odocoileus virginianus*) and feral pigs (*Sus scrofa*). The first set of four photographs were posted on a hunting website (www.louisianasportsman.com) in 2009, and show an adult alligator investigating corn scattered on the ground below a feeder. Whether or not the alligator is actually consuming the corn cannot be determined from the images. Stamps on the photographs indicate these were taken on 22 July 2009 over a 32-minute period (2224-2256 h) at air temperatures ranging from 73 to 77°F (ca. 22 to 25°C). Specific locality information does not accompany the photographs.

The second set of photographs was provided to the authors by Mr. Joey Futrell in September 2010. These photographs were

taken near Napoleonville in Assumption Parish, Louisiana, on 30 and 31 August 2010, at 2105 and 2038 h respectively. On both dates an adult alligator (estimated total length= 210 to 240 cm) is visible in the photographs standing among corn scattered beneath the feeder. In one photograph (Fig. 1) the head of the alligator is tilted slightly backwards, a posture often assumed by crocodylians when swallowing to facilitate inertial movement of food down the esophagus. While neither set of photographs unequivocally shows alligators consuming corn, we consider the presence of alligators at wildlife feeders noteworthy and strongly suggestive of frugivory. Because trail cameras take photographs at intervals of one to >10 minutes, relatively brief feeding events are likely to be missed; however, the tilted head posture evident in one photograph indicates the alligator was possibly swallowing corn.



Figure 1. Adult American alligator photographed at an automatic wildlife feeder dispensing corn in Assumption Parish, Louisiana, USA. Note the rearward tilt of the alligators head. Photograph courtesy of Mr. Joey Futrell.

It remains unclear how foraging alligators locate wildlife feeders, which are usually placed in semi-cultivated “food plots” established to attract deer or in upland habitats, rather than in close proximity to wetlands. When corn is dispensed, the feeder produces an audible clicking noise that might serve to attract the attention of an alligator causing it to investigate the source of this sound. Although the role of auditory cues in crocodylian foraging behavior is not well-studied, alligators are attracted to splashing sounds (Hartley and Hartley 1977; Lazell and Spitzer 1977), and *Caiman crocodilus* use advertisement calls of anurans to locate these prey (Bernal 2006). Of course, we cannot rule out the possibility that alligators were attracted to the feeders by the presence of potential prey species rather than the availability of corn. White-tailed deer, feral pigs, and raccoons (*Procyon lotor*) are visible in photographs taken at feeders, and all have been reported in the diet of alligators (McIlhenny 1935; Epstein *et al.* 1983; Wolfe *et al.* 1987; Shoop and Ruckdeschel 1990).

These photographs and the reports of others indicate that on occasion alligators deliberately consume fruits, seeds and other plant materials; thus, there is no *a priori* reason to assume the

