Geoemydid turtles of the Sulu Archipelago, Philippines, and a historical record of *Cyclemys dentata* (Gray, 1831) for Siasi Island

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Abstract. For the Sulu Archipelago, Philippines, records of geoemydid turtles are reviewed. Previous records of *Cuora* amboinensis kamaroma were known from the islands of Sangasanga, Tawitawi, and Jolo (= Sulu); *Cyclemys dentata* and *Heosemys spinosa* were known from Tawitawi. Based on a historical voucher specimen collected in the late 19th century, we record *C. dentata* for the first time also for the island of Siasi.

In recent years the Philippines have received increasing attention in biodiversity research, not least because these islands constitute an important biodiversity hotspot (Myers et al., 2000). The current threats for the Philippine biodiversity are causally linked to poverty and an alarming human population growth by c. 2%per year. This results in additional pressure to the few remaining natural habitats. As a consequence, entire islands have lost their original environment already (Heaney and Regalado, 1998). Although the problem was addressed by legal actions such as the "Protected Area Act" (R.A. No. 7586) and the "Wildlife Act" (R.A. No. 9147), wanton destruction of residual habitats goes on. Traditional slash-and-burn practices for shifting agriculture, logging, mining, overfishing, and other unsustainable exploitation of natural resources continue to be major hazards to rainforests, inland waters and marine ecosystems. Over-collection is an additional threat for various vertebrates, in particular for turtles (Diesmos et al., 2004). For obvious reasons, recording the original native fauna of each island is basic for any conservational endeavour, and this is especially true for chelonians.

The Sulu Archipelago, located in the south of the Philippines close to Borneo, is subjected to armed conflicts since decades and its chelonian fauna remains little studied. Gaulke (1995) mentioned for the first time *Cyclemys dentata* (Gray, 1831) for the island of Tawitawi

and recorded *Cuora amboinensis kamaroma* Rummler & Fritz, 1991 for the islands of Sangasanga, Tawitawi, and Jolo (= Sulu). Historical voucher specimens from Jolo exist in the collection of the Muséum National d'Histoire naturelle, Paris (Gaulke and Fritz, 1998). Fritz (1997) described a voucher specimen of *Heosemys spinosa* (Gray, 1830) from the Zoological Museum Copenhagen, collected by the Danish Noona Dan Expedition in 1961 on Tawitawi. During the same expedition also a specimen of *Cyclemys dentata* was collected there.

In the Muséum National d'Histoire naturelle, Paris exists another historical voucher specimen, providing evidence for the occurrence of C. dentata on the island of Siasi (MNHN 1985.584; Fig. 1). This specimen represents an additional record of the species for the archipelago and its first record for Siasi. The turtle, an stuffed adult female (straight line carapacial length 20.0 cm), was obtained in 1885 from the naturalist and collector Antoine-Alfred Marche, who made two voyages to remote islands of the Philippines in 1879-1881 and 1882-1884 (Encyclopædia Britannica, 2008). It is unknown whether C. dentata still occurs on Siasi. Gaulke (1995) did not find the species in the early 1990s there. The island of Siasi is separated by c. 50 km seaway from Tawitawi, from where the species was previously recorded (Gaulke, 1995). The distance from Tawitawi to Borneo, where C. dentata is wide-spread (Fritz et al., 2008), is approximately 100 km air-line. It seems likely that C. dentata, as well as the other geoemydid species, reached the Sulu Archipelago from Borneo during Pleistocene low sea-level stands when the Sulu Islands were repeatedly interconnected and the seaway to Borneo was much narrower, even though a land connection to Borneo did probably not exist during the last 250,000 years (Voris, 2000).

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Figure 1. Dorsal and ventral aspect of adult female *Cyclemys dentata* (MNHN 1985.584) collected on the island of Siasi in the late 19th century. Photos: F. Höhler.