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Intergradation between subspecies of *Cuora galbinifrons* BOURRET, 1939 and *Pyxidea mouhotii* (GRAY, 1862) in southern North Vietnam (Reptilia: Testudines: Geoemydidae*)

With 1 Table and 20 Figures

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Kurzfassung. Zur Intergradation zwischen den Unterarten von *Cuora galbinifrons* BOURRET, 1939 und *Pyxidea mouhotii* (GRAY, 1862) im südlichen Nordvietnam (Reptilia: Testudines: Geoemydidae). – Für die vietnamesischen Provinzen Ha Tinh und Quang Binh wird eine Intergradation zwischen *Cuora g. galbinifrons* und *C. g. bourreti* nachgewiesen. Analoge Verhältnisse existieren dort bei *Pyxidea m. mouhotii* und *P. m. obsti*. Die komplizierte Nomenklaturgeschichte von *Cuora galbinifrons* wird diskutiert und die Typuslokalität von *Cuora galbinifrons bourreti* OBST & REIMANN, 1994 von „Linh Cam (Ha Tinh), nördliches Zentralvietnam“ auf „Bach Ma, Zentralvietnam“ korrigiert, da es beim Holotypus zu einer Fundortverwechslung kam.

Abstract. It is shown that *Cuora g. galbinifrons* and *C. g. bourreti* intergrade in the Vietnamese provinces of Ha Tinh and Quang Binh. A parallel situation exists there for *Pyxidea m. mouhotii* and *P. m. obsti*. The complicated nomenclatural history of *Cuora galbinifrons* is discussed and the type locality of *Cuora galbinifrons bourreti* OBST & REIMANN, 1994 is corrected from “Linh Cam (Ha Tinh), northern Central Vietnam” to “Bach Ma, Central Vietnam” as a locality confusion occurred with the holotype.

Key words. Reptilia, Testudines, Geoemydidae, *Cuora galbinifrons*, *Pyxidea mouhotii*, *Cuora galbinifrons galbinifrons*, *Cuora galbinifrons bourreti*, *Pyxidea mouhotii mouhotii*, *Pyxidea mouhotii obsti*, subspecies, intergradation, type locality, Vietnam.

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* Geoemydidae is used as BOUR & DUBOIS (1986) demonstrated that this name has nomenclatural priority over Bataguridae.

Introduction

Cuora galbinifrons BOURRET, 1939 and *Pyxidea mouhotii* (GRAY, 1862) belonged to the least known Southeast Asian chelonians for a long time. Only in recent years greater numbers of specimens became known to science, mainly due to the drastically increased trade for the demands of Traditional Chinese Medicine and the Chinese food markets (OBST & REIMANN 1994, JENKINS 1995, LE & BROAD 1995, LEHR 1996, 1997, FRITZ et al. 1998, LEHR et al. 1998a, b, ZHAO 1998, STUART 1999, VAN DIJK et al. 2000, FIEBIG & LEHR 2000). Based on a cladistic analysis of morphological characters, YASUKAWA et al. (2001) suggested recently to treat *Cuora galbinifrons* as a member of the genus *Cistoclemmys*, as already proposed by BOUR (1980). Awaiting the results of molecular studies underway, we retain for conservative reasons *galbinifrons* here as a member of the genus *Cuora*.

Cuora galbinifrons and *Pyxidea mouhotii* are both polytypic. According to the newest revisions, *Cuora galbinifrons* consists of three subspecies which are distributed from the north to the south of the range as follows (LEHR et al. 1998a, b): *Cuora galbinifrons galbinifrons* BOURRET, 1939 (North Vietnam and adjacent China), *C. g. bourreti* OBST & REIMANN, 1994 (Central Vietnam and neighbouring regions of Laos and Cambodia), *C. g. picturata* LEHR, FRITZ & OBST, 1998 (South Vietnam and adjacent Cambodia). *Pyxidea mouhotii* shows similar distribution and differentiation patterns in Vietnam and the neighbouring countries. In Central Vietnam the northern subspecies *Pyxidea mouhotii mouhotii* (GRAY, 1862) is replaced by *P. mouhotii obsti* FRITZ, ANDREAS & LEHR, 1998. In contrast to *Cuora galbinifrons*, the range of *P. mouhotii* also stretches westwards to Myanmar (Burma) and northeastern India, perhaps extending into Thailand. According to FRITZ et al. (1998), the seemingly disjunct populations in northeastern India and Myanmar (Burma) could represent a third, undescribed subspecies.

LEHR et al. (1998b) speculate that an intergradation zone between *C. g. galbinifrons* and *C. g. bourreti* might exist in northern Central Vietnam or in southern North Vietnam. A similar situation is to be expected for *P. m. mouhotii* and *P. m. obsti* in this region.

During recent zoological fieldwork in Vietnam, one of us (T. ZIEGLER) obtained new data with regard to these questions. In the course of his herpetological studies from June to September 1997 and from August to October 1998 he repeatedly visited local animal traders in the surroundings of the Ky Anh - Ke Go lowland humid forest reserve in the south of Ha Tinh province, southern North Vietnam (for details, see ZIEGLER 2000, 2002). Turtles at the animal traders' hands, which were definitively captured in that area, were photographed and partially bought as vouchers.

Additionally, during several journeys from 1993-2001 first comparative herpetological surveys and visits at a local animal trader and "medicine man" were made in the Phong Nha - Ke Bang limestone forest area in Quang Binh province, bordering Ha Tinh province in the south (see ZIEGLER et al. 2000, ZIEGLER & HERRMANN 2000). In the course of these investigations data on the morphology and distribution of turtles were also gathered. As a result of this research we record here for the first time a subspecific intergradation for *Pyxidea mouhotii* and for the Southeast Asian mainland also for *Cuora galbinifrons*.

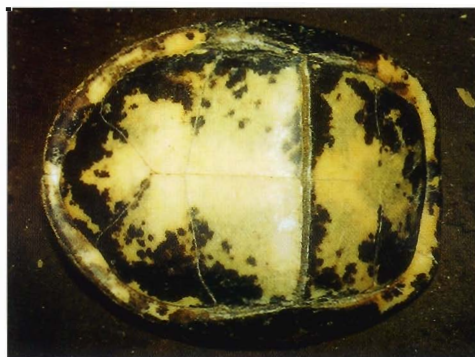
Results

***Cuora galbinifrons*:** Single individuals of this species were encountered regularly at local animal collectors and traders on the border of the Ky Anh - Ke Go reserve (e. g., at the village Ky Thuong). The specimens had been obtained from a forest northwest of Ky Thuong. *Cuora galbinifrons* was offered for prices up to 200,000 Vietnamese Dong per kg (about 16 US \$). From June to September 1997 and from August to October 1998 a total of about 10-15 specimens were seen there, but only one specimen was bought as a voucher; it is now deposited in the herpetological collection of the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn (ZFMK 74477, field number TZ 1048, 9 July 1997). The largest specimen measured had a straight line carapace length of 170 mm.

Remarkably the shell shape, coloration and pattern was quite variable (compare also ZIEGLER 2000, 2002), some specimens closely resembling the northern subspecies *C. g. galbinifrons*, others more similar to the Central Vietnamese subspecies *C. g. bourreti* (Figs. 1-4). Generally, the shell was elongated, but at least slightly more domed than in *C. g. galbinifrons* and the coloration and pattern was intermediate. This is especially obvious regarding the plastral pattern. Aside from specimens with nearly or entirely black plastra (like *C. g. galbinifrons*), specimens with a blotched pattern (like *C. g. bourreti*) and intermediate character states were found. The carapace was in some specimens laterally only more or less speckled, as in the population on Hainan island, in others heavily patterned, sometimes with the dark elements arranged to a more or less solid band, like in *C. g. bourreti*. Also, one specimen was found which was virtually indistinguishable from *C. g. galbinifrons*. The dark median band on the carapace was in some specimens forked anteriorly, like in the nominotypical sub-



Figs. 1-2: Series of *Cuora galbinifrons*. Ky Anh - Ke Go reserve, southern Ha Tinh province, North Vietnam in dorsal and ventral aspect. Photos: T. ZIEGLER



Figs. 3-4: *Cuora galbinifrons* resembling *C. g. bourreti*. Ky Anh - Ke Go reserve, southern Ha Tinh province, North Vietnam in dorsal and ventral aspect. Photos: T. ZIEGLER

species, in others it reached the carapacial rim in full width, as in *C. g. bourreti*. One turtle lacked a light median line on the shell entirely, a condition often observed in *C. g. bourreti*. The soft parts of the turtles were never patterned with red, as in *C. g. galbinifrons*.

At Phong Nha - Ke Bang three *Cuora galbinifrons* were photographed by H.-W. HERRMANN and T. ZIEGLER. Two of the turtles were barely indistinguishable from *C. g. bourreti*, with domed shells and a blotched plastral pattern (Figs. 5-6). However, one female exhibited an



Figs. 5-6: Specimen indistinguishable from *Cuora galbinifrons bourreti*. Phong Nha - Ke Bang National Park, Quang Binh province, North Vietnam in dorsal and ventral aspect. Photos: T. ZIEGLER

elongated shell and an entirely black plastron, like *C. g. galbinifrons*. Moreover, in this specimen the dark median band on the carapace was forked a bit anteriorly (Figs. 7-8). The intermediate character of the described and figured turtles from Phong Nha - Ke Bang and Ky Anh - Ke Go is obvious. Phong Nha - Ke Bang is positioned more southerly than the Ky Anh - Ke Go area. Hence, it is not surprising that two *C. galbinifrons* observed there resemble *C. g. bourreti* closer than any specimens from Ky Anh - Ke Go.



Figs. 7-8: Specimen resembling *Cuora galbinifrons galbinifrons*. Phong Nha - Ke Bang National Park, Quang Binh province, North Vietnam in dorsal and ventral aspect. Photos: H.-W. HERRMANN

***Pyxidea mouhotii*:** A generally similar situation was observed in the Ky Anh - Ke Go reserve regarding this species. *P. mouhotii* was among the most abundant chelonians, according to the numbers of observed specimens at the animal collectors and dealers. In one month (beginning of July to beginning of August 1997), 15 specimens were studied there. Small specimens were offered for 20,000 Vietnamese Dong per kg (about 1.60 US \$) for sale, one animal dealer asked for the tenfold price. The specimens originated, according to the collectors, from the forest northwest of Ky Thuong (e. g., surroundings of Chin Xai and Ho Ke Go within Ky Anh - Ke Go area). The following voucher specimens obtained from local collectors were preserved and deposited in the herpetological collection of the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn: ZFMK 74478 (field number TZ 1045), subadult, surroundings of Chin Xai / Ho Ke Go, 29 July 1997; ZFMK 74479 (field number TZ 1046), subadult, surroundings of Chin Xai, 23 August 1997; ZFMK 74480 (field number TZ 1047), adult male, forest northwest of Ky Thuong, 6 July 1997.

The northern subspecies *P. m. mouhotii* is characterised by an elongated shell and a plastral pattern consisting of black bars along the outer edges of the plastron, when present. The shell of the southern subspecies *P. m. obsti* is in dorsal view roundish and the plastral pattern consists of radiating black markings (FRITZ et al. 1998).

The shell shape of the specimens observed at Ky Thuong was roundish to elongated and also the plastral pattern was in some specimens somewhat intermediate (Figs. 9-10; compare also ZIEGLER 2000, 2002). The black markings were never radiating, but sometimes expanded to the median line of the plastron. The shell shape of two *P. mouhotii* studied and photographed 1998 by H.-W. HERRMANN at Phong Nha - Ke Bang was intermediate between *P. m. mouhotii* and *P. m. obsti*, too. The plastron was immaculate horn-coloured, as it occurs from time to time in both subspecies. However, a third specimen obtained from Phong Nha - Ke Bang in September 2001 and meanwhile deposited in the herpetological collection of the Museum für Tierkunde Dresden (MTD 44046) was with respect to morphology, pattern and coloration indistinguishable from the nominotypical subspecies (Figs. 11-12).

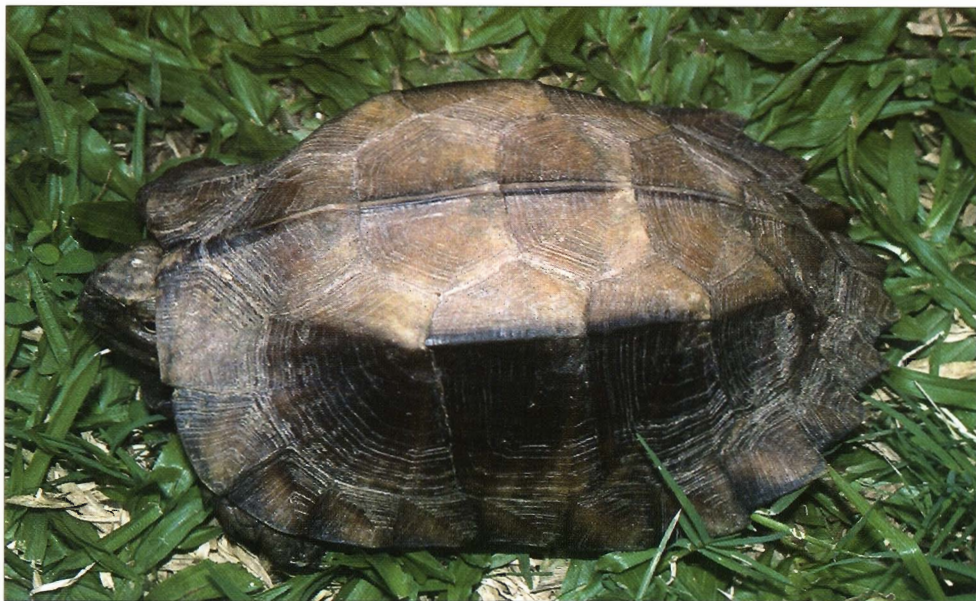
Notes on taxonomy and nomenclatural history of *Cuora galbinifrons* and on the type localities of *C. g. galbinifrons* and *C. g. bourreti*

BOURRET (1939) described *Cuora galbinifrons* based on four syntypes from the collection of the former Laboratoire des Sciences Naturelles de l'Université Indochinoise, Hanoi. According to the original description, these specimens originated from three localities in North and Central Vietnam and were quite variable in colour, pattern and shell shape. We have to discuss these syntypes below. LI (1958) described from the South Chinese island Hainan *Cycl-
emus* [sic! = *Cyclemys*] *flavomarginata hainanensis*. This taxon was later unmasked as a junior synonym of *Cuora galbinifrons* (ZHAO & ADLER 1993, see also below). In the 1990's different morphs of *Cuora galbinifrons* appeared in the international pet trade, stimulating a search for their geographic sources and the description of several new subspecies. IVERSON & MCCORD (1992) described *Cuora galbinifrons serrata*, allegedly also occurring on Hainan. This taxon turned out to be a hybrid between *C. galbinifrons* and *Pyxidea mouhotii* (PARHAM et al. 2001) of dubious geographic origin (FRITZ & OBST 1997). A Dutch-Austrian expedition to Hainan failed to find any evidence for the occurrence of *serrata*-like turtles on this island (DE BRUIN & ARTNER 1999). OBST & REIMANN (1994) and LEHR (1996) independently found out that *C. galbinifrons* with an elongated shell and a black plastron are restricted to the northernmost part of the range, whereas specimens with a blotched plastral pattern and a domed shell are more southerly occurring. OBST & REIMANN (1994) designated a lectotype for *Cuora galbinifrons* BOURRET, 1939 and restricted the type locality to Tam Dao in North Vietnam. They described the populations from Central Vietnam and adjacent countries as a new subspecies, *Cuora galbinifrons bourreti* OBST & REIMANN, 1994, based on one of the original specimens of BOURRET (1939) as the holotype. *C. g. bourreti* is mainly characterised by a more domed shell and a blotched plastral pattern. Moreover, the carapace bears wide, dark lateral bands which are lacking in the nominotypical subspecies. Central Vietnam as range of *C. g. bourreti* was verified by E. LEHR during six expeditions to Vietnam from 1993 to 1996 (LEHR 1996,



Figs. 9-10: Female *Pyxidea mouhotii* very similar to *P. m. obsti*. Ky Anh - Ke Go reserve, southern Ha Tinh province, North Vietnam in dorsal and ventral aspect. Photos: T. ZIEGLER

1997, LEHR et al. 1998a, b). However, during these expeditions it turned out that the southernmost representatives of *Cuora galbinifrons* are morphologically distinct from *C. g. galbinifrons* and *C. g. bourreti*. LEHR et al. (1998a) described these populations from southern Vietnam and perhaps (!) adjacent Cambodia as new subspecies, *C. g. picturata*. It is closely related to *C. g. bourreti* but differs from this taxon, among others, by the lower position of the wide, dark lateral bands of the carapace, which include the upper part of the posterior marginals, unpatterned light anterior marginals, and a well defined light, thin stripe along the longitudi-



Figs. 11-12: Male *Pyxidea mouhotii* indistinguishable from *P. m. mouhotii* (now MTD 44046). Phong Nha - Ke Bang National Park, Quang Binh province, North Vietnam in dorsal and ventral aspect. Photos: T. ZIEGLER

nal shell axis (lacking in *bourreti*) and the even more domed shell. A complete review of diagnostic features of the three subspecies is given in LEHR et al. (1998b).

OBST & REIMANN (1994) regarded *Cyclemys flavomarginata hainanensis* LI, 1958 as a junior synonym of *Cuora galbinifrons galbinifrons* BOURRET, 1939, whereas IVERSON & MCCORD (1992) believed the taxon to be a distinct subspecies. LEHR et al. (1998b) demonstrated that the Hainan population is intermediate between *C. g. galbinifrons* and *C. g. bourreti* but closer to the nominotypical subspecies. The International Code of Zoological Nomenclature, also in its newest edition (ICZN

1999), presents no regulations for such cases where a species group name is based on a population from an intergradation zone of two subspecies, leaving the decision to which subspecies this name refers to the revising authors. LEHR et al. (1998b) concluded to treat *Cyclemys flavomarginata hainanensis* LI, 1958 as a junior synonym of *Cuora galbinifrons galbinifrons* as the population on Hainan is morphologically closer to this subspecies than to *C. g. bourreti*. From a zoogeographical point of view, LEHR et al. (1998b) suggested that the Hainan population must be a relict of a former intergradation zone, which was cut-off to the Asian mainland by the raising post-glacial sea level. In this study, we presented evidence that on the Southeast Asiatic mainland an intergradation zone also exists between *C. g. galbinifrons* and *C. g. bourreti*. As the type locality of *C. g. bourreti* is situated in the same Vietnamese province (Ha Tinh, OBST & REIMANN 1994) as this intergradation zone, we have to reconsider here the ambiguous locality data for the lectotype of *C. galbinifrons* and the holotype of *C. g. bourreti* (for review see Tab. 1). BOURRET (1939) mentioned in the description of *Cuora galbinifrons* that the four syntypes originated from three localities as follows: Bach Ma (Central Vietnam, catalogue number T. 54, adult female), Tam Dao (North Vietnam, T. 55, T. 59, two juveniles), and Linh Cam, Ha Tinh province (northern Central Vietnam, T. 60, adult female). In the original description black-and-white drawings of two syntypes (T. 54, T. 59) were printed as Figure 2 (reproduced here as Fig. 13), where a minor inconsistency occurred (Tab. 1).

Specimen(s) and subspecific allocation	BOURRET (1939)	BOURRET (1941)	OBST & REIMANN (1994)	this study
T. 54 = MNHN 1948.36, adult female, <i>Cuora galbinifrons galbinifrons</i>	Syntype of <i>Cuora galbinifrons</i> , locality: Bach Ma, Central Vietnam. Depicted on Fig. 2.	Plate X (= BOURRET 1939: Fig. 2) shows correctly T. 54.	Lectotype of <i>Cuora galbinifrons</i> BOURRET, 1939, locality must have been confused, T. 54 must originate at Tam Dao, North Vietnam.	Locality designation by OBST & REIMANN (1994) most likely correct.
T. 55, T. 59, juveniles, <i>Cuora galbinifrons galbinifrons</i> ?	Syntypes of <i>Cuora galbinifrons</i> , locality: Tam Dao, North Vietnam. "Squelette: Sp. T. 59" depicted in Fig. 2f-i. Scale of Fig. 2h, i indicates a small size, however, shell is identical with T. 54, so that probably only the figures of the skull refer to T. 59.	Both specimens (T. 55, T. 59) depicted in colour in Plate C. Plate X (= BOURRET 1939: Fig. 2) repeats information from BOURRET (1939).	No new information.	Locality might be correct, however, specimens could also originate in Ha Tinh province and represent intergrades morphologically close to <i>C. g. galbinifrons</i> .
T. 60 = MNHN 1948.37, adult female, <i>Cuora galbinifrons bourreti</i>	Syntype of <i>Cuora galbinifrons</i> , locality: Linh Cam, province Ha Tinh, northern Central Vietnam.	Plate B (colour), allegedly depicting T. 54, shows T. 60.	Holotype of <i>Cuora galbinifrons bourreti</i> , locality: Linh Cam, province Ha Tinh, northern Central Vietnam.	In Ha Tinh province no <i>C. g. bourreti</i> occur, locality of T. 60 must have been confused. Type locality of <i>C. g. bourreti</i> emended to Bach Ma, Central Vietnam.

Tab. 1: Synopsis of selected data on type specimens of *Cuora galbinifrons* from BOURRET (1939, 1941), OBST & REIMANN (1994), and this study.

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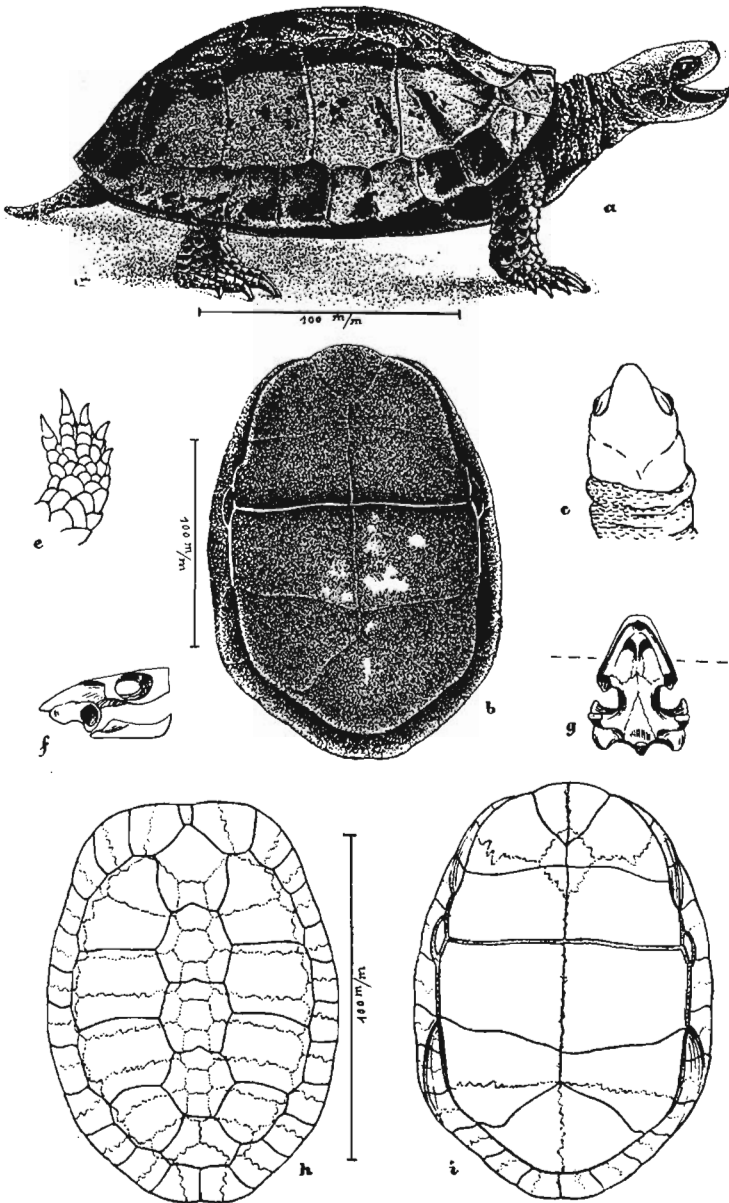


Fig. 2. — *Cuora galbinifrons*.
(Sp. n° T. 54 de Bach-Ma. — Squelette: Sp. T. 59 du Tam-Dao).

Fig. 13: Reproduction of Figure 2 of the original description of *Cuora galbinifrons* BOURRET, 1939. This figure was reprinted as Planche X in BOURRET (1941). The caption states that T. 54 and T. 59 are figured. Note that the plastra in Fig. 2b and Fig. 2i are identical (see also Tab. 1).

Only two years later BOURRET (1941) published in his famous book “Les tortues de l’Indochine” drawings of all four syntypes. The same figures of T. 54 and T. 59 are reprinted as Plate X. In addition to these black-and-white illustrations, BOURRET (1941) published three new coloured drawings as Plates B and C (reproduced here as Figs. 14-15). According to page 151, the specimens on Plate C represent T. 55 and T. 59 and the turtle on Plate B once more T. 54.

However, as previously pointed out by OBST & REIMANN (1994) and LEHR et al. (1998b), it is obvious that a mistake occurred. The specimen figured as T. 54 by BOURRET (1939) and on Plate X by BOURRET (1941) has an elongated shell and a black plastron, characteristic for the northern subspecies *C. g. galbinifrons*, whereas the allegedly same specimen on Plate B represents the subspecies *C. g. bourreti*. This specimen (Fig. 16-17), now the holotype of *C. g. bourreti* OBST & REIMANN, 1994, is today in the collection of the Muséum National d’Histoire naturelle, Paris (MNHN 1948.37), and was originally bearing BOURRET’s catalogue number T. 60. The other specimen (Fig. 18-19) is indeed T. 54 and now also in Paris, today bearing the number MNHN 1948.36. Both types were studied by us.

BOURRET (1939) stated that T. 54 originates at Bach Ma (Central Vietnam), whereas he mentioned Linh Cam, Ha Tinh province (northern Central Vietnam) for T. 60. However, at Bach Ma occur *C. galbinifrons* with a blotched plastral pattern and a domed shell, now known as *C. g. bourreti*, and **not** specimens with an elongated shell and a black plastron, as in T. 54. Hence, OBST & REIMANN (1994) rejected Bach Ma as locality of T. 54 and concluded that the locality data must have been confused. They chose T. 54 = MNHN 1948.36 as lectotype of *Cuora galbinifrons* BOURRET, 1939 and restricted the type locality to “Tam Dao, North Vietnam”. Further they assumed that T. 60 = MNHN 1948.37 originated indeed at Linh Cam, as this locality is positioned more to the south. As a marginal note it must be mentioned that OBST & REIMANN (1994) unfortunately confused some of the catalogue numbers of the type specimens.



Fig. 14: Reproduction of BOURRET’s (1941) Planche B. According to page 151 (BOURRET 1941) the figured specimen is identical with T. 54, depicted also in BOURRET’s (1941) Planche X (= Fig. 2 in BOURRET 1939; reproduced here as Fig. 13). In fact, the specimen is T. 60.

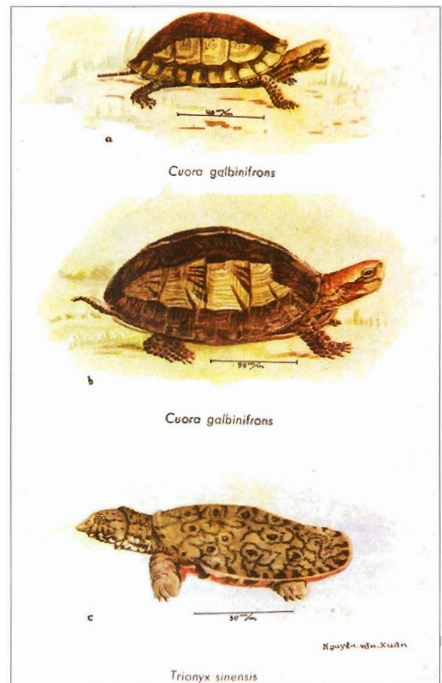
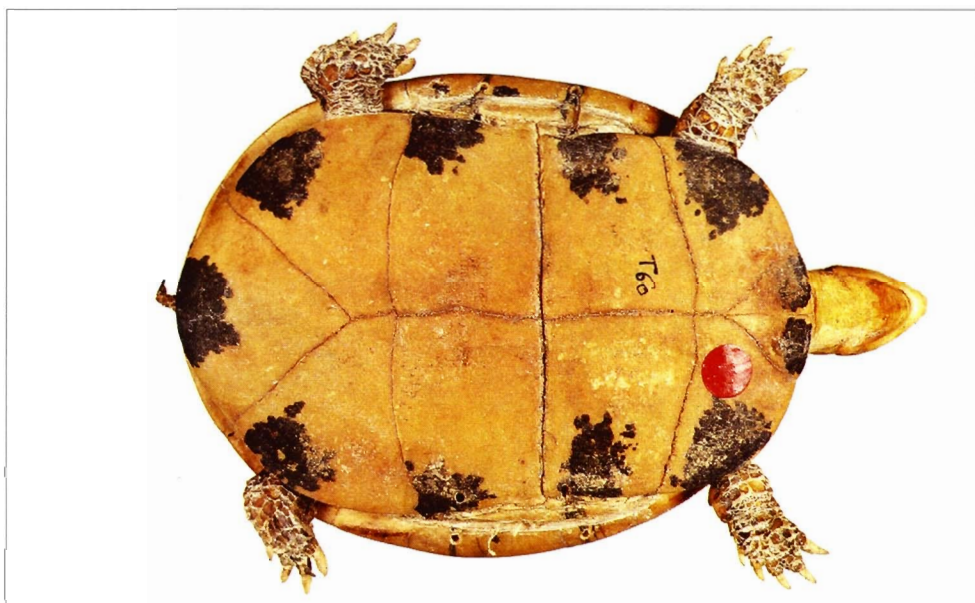
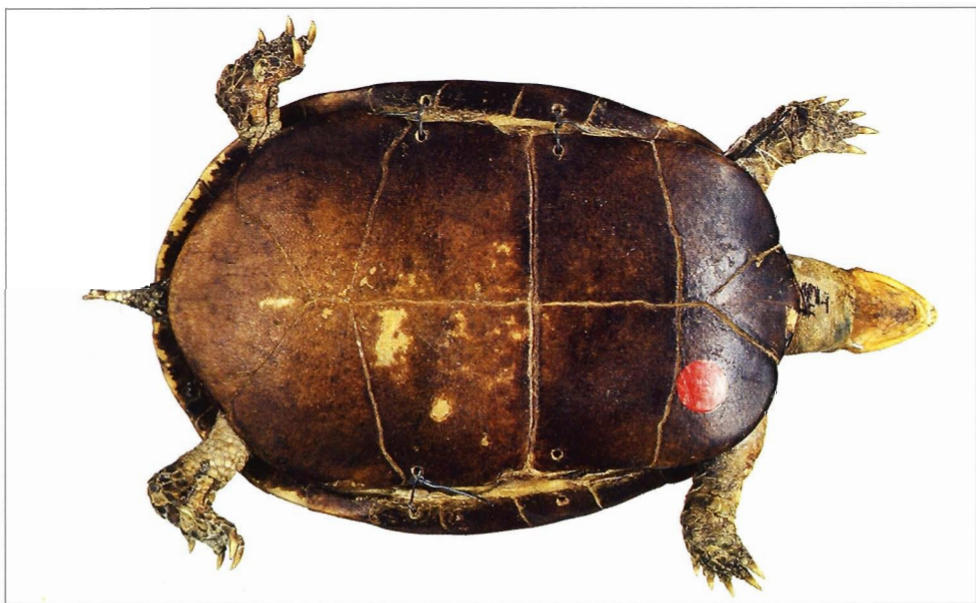


Fig. 15: Reproduction of BOURRET’s (1941) Planche C. According to page 151 (BOURRET 1941) depicting “le sp. [spécimen] T. 55 et aussi le sp. 59, également du Tam-Dao”.



Figs. 16-17: Lateral and ventral aspect of the holotype of *Cuora galbinifrons bourreti* OBST & REIMANN, 1994 (MNHN 1948.37 = T. 60). Compare with Figures 13-14. Photos: F. HÖHLER

We know now that the Ha Tinh province, where T. 60 = MNHN 1948.37 is said to originate, is situated in an intergradation zone between *C. g. galbinifrons* and *C. g. bourreti*. Linh Cam, the exact locality of MNHN 1948.37, is north of the Ky Anh - Ke Go reserve (Fig. 20). Not a single specimen observed there was a characteristic representative of the subspecies *C. g. bourreti* like MNHN 1948.37, but some of the specimens closely resemble the nominotypical subspecies. The most parsimonious explanation for this finding is that MNHN 1948.37 did not originate at Linh Cam but instead at Bach Ma,



Figs. 18-19: Lectotype of *Cuora galbinifrons* BOURRET, 1939 (MNHN 1948.36 = T. 54). Compare with Figures 13-14. Photos: F. HÖHLER

where the occurrence of the “proper” subspecies was verified during six expeditions by E. LEHR from 1993-1996. Therefore, we emend the type locality of *Cuora galbinifrons bourreti* OBST & REIMANN, 1994 from “Linh Cam (Ha Tinh), northern Central Vietnam” to “Bach Ma, Central Vietnam”.

Further, we agree with OBST & REIMANN (1994) that the localities of BOURRET’s type specimens must have been confused. We agree, too, that Bach Ma must be wrong as the locality for T. 54 = MNHN 1948.36, and that this specimen, the lectotype of *Cuora galbinifrons* BOURRET,

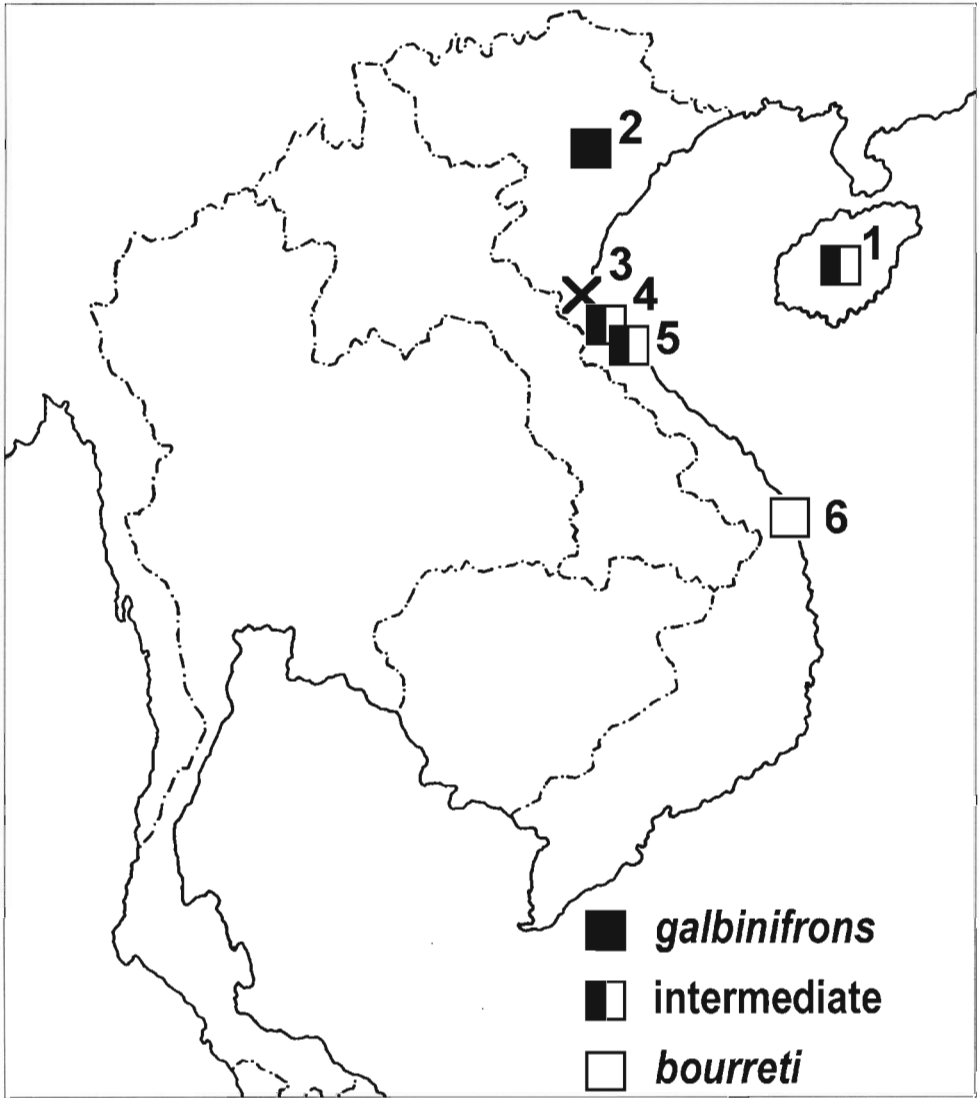


Fig. 20: Localities for *Cuora galbinifrons*: (1) Hainan Island, China (LEHR et al. 1998b); (2) Tam Dao, Vinh Phu province, North Vietnam (BOURRET 1939), restricted type locality of *Cuora galbinifrons galbinifrons* BOURRET, 1939 (OBST & REIMANN 1994); (3) Linh Cam, Ha Tinh province, northern Central Vietnam (BOURRET 1939), original wrong type locality of *Cuora galbinifrons bourreti* OBST & REIMANN, 1994; (4) Ky Anh - Ke Go area, southern Ha Tinh province, northern Central Vietnam (ZIEGLER 2000, 2002, this study); (5) Phong Nha - Ke Bang area, Quang Binh province, northern Central Vietnam (this study); (6) Bach Ma, Thua Thien Hue province, Central Vietnam (BOURRET 1939), emended type locality of *Cuora galbinifrons bourreti* OBST & REIMANN, 1994 (this study).

1939, originated most likely at Tam Dao in North Vietnam.

We have not seen the juvenile paralectotypes T. 55 and T. 59. However, according to the colour drawings in BOURRET (1941: Plate C, our Fig. 15) these specimens represent either pure *C. g. galbinifrons* or specimens at least very close to the nominotypical subspecies. Hence, they may be either from Tam Dao indeed, as given in BOURRET (1939, 1941), or represent intermediate specimens from Linh Cam (northern Ha Tinh province), closely resembling *C. g. galbinifrons*.

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