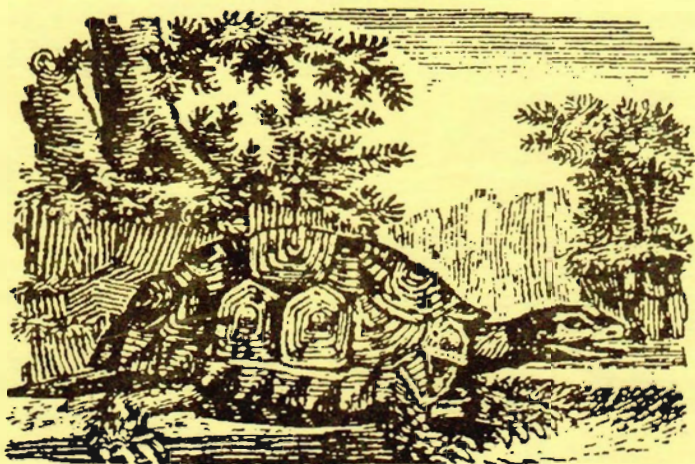
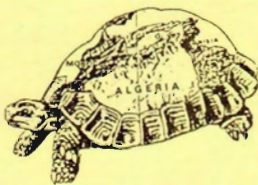


Rhodini

CHELONIAN RESEARCH
FOUNDATION



**TORTOISE
SURVIVAL
PROJECT**



**INTRODUCTION TO A CONSERVATION PROJECT
FOR THE NORTH AFRICAN TORTOISE**

(Including a description of a new species)

Testudo flavominimaralis

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HIGHFIELD, A.C. 1989. Description of a miniature tortoise *Testudo flavominimaralis* n.sp. from North Africa.

Description of a miniature tortoise *Testudo flavominimaris* n.species from North Africa.

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ABSTRACT

The following description is of a new species, not previously described or named, which demonstrates major divergence from *Testudo graeca* LINNAEUS 1758 and *Testudo whitei* BENNETT 1836, the only species previously known from the region. No information currently exists on precise distribution, population densities or ecology. It is believed that where observed in the field they have generally been mistaken for juvenile specimens of *T. graeca*.

KEYWORDS - Taxonomy - Africa - Testudo - Libya - Tunisia - Algeria -Morocco - Nomenclature

INTRODUCTION

During morphometric and taxonomic studies upon tortoises collected from North Africa it became clear that the current designation of *Testudo graeca* LINNAEUS 1758 was inadequate to account for the diversity of forms encountered. One result of this revision was the re-discovery of the valid form *Testudo whitei* BENNETT 1836 from the region of Algiers (Highfield & Martin, 1989). The tortoise described here does not appear to have been described previously, although they were not uncommonly collected and featured in the export trade of 'pet' tortoises from the region. Where encountered they have often been mistaken either for juvenile specimens of *Testudo graeca* L. or as specimens of *Testudo (graeca) terrestris* FORSKAL 1775 (Wermuth, 1958). This latter they manifestly are not, as the tortoises of Syria, Israel and the Lebanon which form the basis of that taxon do not in fact occur anywhere in North Africa. Reports of *Testudo (graeca) terrestris* from North Africa are erroneous. The status of this latter taxon will be discussed in some considerable detail in the present authors 'Revision of the Testudines Genus; *Testudo*' (Part two) which will appear in the shortly forthcoming Journal of Chelonian Herpetology Vol.1:(2).

DESCRIPTION OF DIAGNOSTIC CHARACTERS

Carapace markings:

Groundcolour bright yellow, dark brown to black central dot on vertebral and costal scutes which are edged in black, marginals marked with indistinct brown-black dots, the 'V' or 'Saw-tooth' pattern characteristic of *T. graeca* L. is absent or ill defined, the yellow groundcolour of the vertebrals, costals and marginals frequently features a random distribution of smaller black dots and flecks.

Skin and scale colouration:

The skin of the shoulders and thighs is typically orange-yellow and may feature darker

brown-black flecks, the skin of the neck and scales of the head are typically very bright yellow, in the case of the head often giving the appearance of a mask. There is typically a large bright yellow area on the top of the head. The scales of the anterior limbs are bright yellow and black.

Plastron markings:

The plastron is typically of a somewhat duller yellow-amber colour than the carapace and features an expanse of brown-black marking in the region of the abdominal and femoral scutes.

General morphology:

The most striking feature of this tortoise apart from its bright colouring is its extremely small adult size. It considerably smaller than *Testudo graeca*, and some 10 times smaller (by weight) and some 2 times smaller (by length) than a typical *Testudo whitei*. The entire osteological structure of the tortoise is highly delicate, with thin yet perfectly formed limbs and a very small head bearing deep black eyes. The carapace is extremely elongate, with a narrow yet high dome, and features distinctly flared (yet not highly serrated) rear marginals. On young specimens the frontal vertebral shield is relatively straight-edged, but with age and growth this becomes rounded. The thighs feature very small but perfectly formed tubercles, and the heels typically feature a set of larger (often bright yellow) triturated scales.

Adult dimensions:

The following measurements were taken from a series of adult specimens all of which were resident within captive collections in the U.K and have been in captivity for periods between 15 - 35 years. In each case, the owners reported little or no growth since originally acquired. At least two of the specimens showed signs of extreme age consistent with an estimated age in excess of 70-80 years.

Carapace length	Weight
125mm	360g
125mm	425g
125mm	450g
120mm	400g
130mm	450g
132mm	495g
137mm	540g*

Average length = 127mm Average weight = 445g

* The weight of this specimen was carefully monitored between 1985 and 1989 when it fluctuated between 472g to a maximum of 540g. There was no increase in length or other discernible evidence of growth, and it was by far the oldest animal in the survey. It would appear reasonable to assume that this may approach the maximum adult size for male specimens of the species.

By comparison, adult male *T. graeca* typically weigh between 750g - 825g and measure 145mm - 160mm in length.

Carapace height & width:

The carapace height of the above specimens ranged from 58mm to 65mm - considerably less than that recorded for adult *T. graeca*. The average median carapace width was 82mm, again much less than for any specimen of *T. graeca* observed to date reflecting the narrow and elongate outline of *Testudo flavominimalis* compared to *T. graeca*.

The above specimens were all male. It is hoped to present additional morphometric and sexual dimorphic data later in a supplementary paper.

Behavioural observations:

Despite their extremely small stature, these tortoises display an unusually active and aggressive behaviour pattern in captivity. They are particularly active during very hot weather when *T. graeca* and *T. whitei* are to be found retired under cover. This suggests that their preferred optimum temperature may be higher.

Habitat and distribution:

North Africa. Precise range and biotype not known. Believed to include Libya.

Previous publications and illustrations:

It has not proved possible to trace any previously published description of this tortoise, however one colour illustration was published in 1987 in a poster series entitled 'Turtles of the World' which does appear (superficially at least) to be the same as our specimens. No size or other data was presented, but the external appearance is strikingly similar. The illustration is mis-titled "*Testudo g. terrestris*" (Pub. by Zoo Med Laboratories Inc., California, USA). This is the only widely published illustration we have been able to locate.

Conclusions

In dimensional terms, this tortoise is considerably smaller than *T. graeca* and closely approaches *Testudo kleinmanni* LORTET 1887 from which it may easily be distinguished by its different plastral markings, the presence of thigh tubercles, and a less pointed and extruded supracaudal shield (Bour, 1988). It is also slightly longer yet narrower than *Testudo kleinmanni*. It should not however be confused with the alleged species *Testudo flowerii* BODENHEIMER 1935.

The proposed nomenclature is derived from its singular appearance, and should be interpreted as the 'Yellow Miniature tortoise'.

Of its habits and distribution, we know virtually nothing. This data is required urgently in order to assess its conservation status.

Type specimen:

Designated 7th July 1989 - TT Collection Ref:89/07/A1

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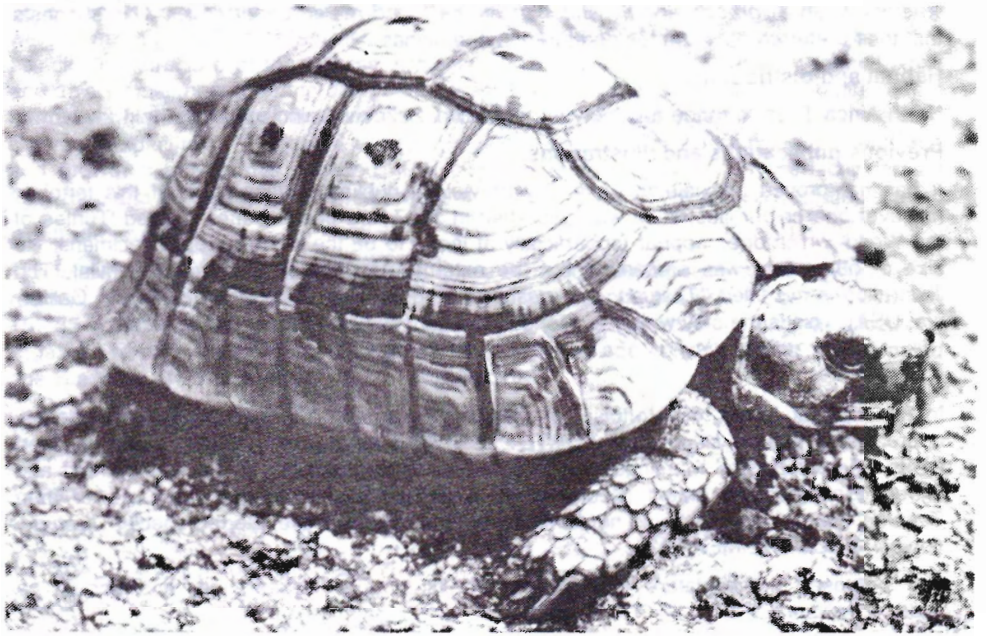


Plate 1. *Testudo flavominimaris*

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