

TUNISIA

1972

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12 MAR - 23 MAY

GABES

GAZETTEER OF TUNISIAN LOCALITIES.

GOUV. DE GABÈS: (IN RELATION TO GABÈS)

(GABÈS = ^{coordinates/map used} 518° E-W; 365° N-S)

BORDJ SAIDANE (74 km W + 14 km S); EL HAMMA (28 km W); LIMAGUÈS
(93 km W, 12 km S); SEMBAT (31 km W); RHENNOUCH (2.5 km W, 6.0 km N);
OÜED EL FERD (10.7 km E, 15 km S); AOUINET (8 km W, ¹¹ km N); STEFTIMI
(100 km W, 9 km S); DOUZ (99 km W, 47 km S); BENI ZELTENE
(37 km S); TOUTJANE (4 km E + 46 km S); MATMATA (11.6 km W,
37 km S); ZARAT (26 km E + 24 km S); OÜED ZIGZAOU (20 km E + 33 km
S.); OÜED EL BEIDA (9 km W + 5 km S); TEBOULBOU (4 km E + 2 km S);

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Spain, Cadix, Prov. Rota:

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Released from USN today, tomorrow begins world's longest voyage! [International Biological Project: Desert Biome !!]

Today was fairly uneventful for the most part. I caught IBERIA's 0930 hr. flight from Sevilla to Madrid. Flight was smooth, nothing was served. Left Madrid at 1330 on ALITALIA bound for Rome. Arrived in Rome about 1500 and waited, somewhat impatiently in an under-construction airport, for the flight to Tunis.

It's 1700 and, at long last, we're boarding. The long bus arrives, carries us to our plane, and I get a "private" seat next to a window over the wing. My thoughts are anticipatory as we ascend through the clouds. Every now and then a cloud betrays its shadowed sea below and the azure Mediterranean can be seen. It is calm and still, Spring is about to happen.

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Sunset is dramatic under these circumstances!

As we approach Carthage airport one sees a gentle blend of old and new. In the bay and along the shore are sailed vessels bearing what I suspect are nets. Further inland, electricity spreads its light upon the darkening land. As I look Eastward into the sea, there is an island in the sun which is as orange as a rock could be. It still amazes me to be flying south to Africa on the day I should be flying W. to the U.S.A.

We land perfectly at TUNIS-CARTHAGE and I am immediately impressed by the warmth of the air. Arabic writing in all that betrays my location: it could be small-town Mediterranean and it could be today, tomorrow, or yesterday. A handsome, bronzed man in a grey suit beckons me to approach. He has something in his left hand and I can see that it's probably my letter so I cautiously approach. Dr. George Novikoff thanks me for sending the photograph and says he'll meet me after customs has seen my baggage.

Customs looks at nothing; perhaps it's my pre-constructed list that impresses them. Dr. Novikoff formally introduces himself and we walk to his car. Somehow, I found the Mercedes-Benz with a removable hardtop hard to take! Guess Tunisia provides money for the rich and sand for the poor. I'm introduced to Tunis, paid, fed, and settled in the hotel for the night. The hotel is nothing special save expensive. \$5.00 for a room furnished or such in a pitiful amount. I slept well and was called for at 0530 on the 12th to start adventure #1.

TUNISIA

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TUNIS - GABÈS

The train to SFAX is leaving at 0600 hr and we arrive at the station early. The city is black around us but the light from the station entrance illuminates one whole city block. It's chilly this early in the morning.

We board the train and find that I'm first class and sit up behind the controls for the electric locomotive. Dr. Novikoff assures me that the conductor will assist me in getting to Gabès and leaves. I am cold as the car is unheated but I am also tired and a little apprehensive. As we travel through the city, past saline marshes, and mountains to the W., I watch the rising of the sun across the gulf. About 1000 I fall asleep to awaken about 1130 just N. of SFAX.

SFAX is upon me; it has warmed considerably and I am lost until a man identifies himself as my guide, protector, and friend. My bag is carried to the station and I purchase a First Class Ticket ^(.770 DINARS) to Gabès. There's an hour to kill and I begin reading J. A. Michener's CARAVANS while noticing that the Tunisian army travels by train and seems to have no officers. 1220 arrives and I board my train.

As we pull out of ^{SFAX} Gabès, everybody and his cousin board the train and fill my compartment. I am pushed, shoved, stepped on, leaned on, rested on, and offered an orange. Although I am hungry, I refuse. 2 1/2 hr. later I should be in Gabès and I'll eat then.

The sun is now hot and we are moving slowly

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southward. We stop, two hours pass, and I get restless. My French is unfortunate but I manage to ~~understand~~ that we have broken down and that it will be another hour before a train arrives from SFAX. Hunger overcomes me but the thirst is worse. Can I drink the water? When I see it's being transported in cans labeled "Soy Bean Oil... donated by citizens of the United States of America" I smile and wonder if the oil has come from lining the can. My thirst disappears but I am still hungry. Hand to left upper jacket pocket where I had stashed some crackers left from Mitatini all too formidable meal. Four crackers form a meal for the day and I return to reading my book.

The train arrives and we start south at sunset. It is dark when we arrive at Gabès and I feel alone at the station. There is nobody waiting for me and I am more angry than frightened. I consider sleeping under a tree for I am so tired and so defeated. A lesson in patience is being deserted in a crowd in the middle of Tunisia.

I see a light in the station and use sign-language to communicate with the man who has a telephone. The operator has quit for the night and it's only 2000 hrs! I'm defeated, I quit.

We leave the station for this man has an idea. We shall go to the Sunat National. Ah, but I meet Jon Ghiselin along the way and all is, apparently well as we drive to the villa and commence with dinner.

TUNISIA, GOUVERNORAT DE GABÈS

13 MAR 72

The day is sunny and mild. We drive N. to explore our surroundings early in the forenoon.

Gabès, 2.5 km W. and 6.0 km N. in a small settlement listed on the map (Transverse Mercator Projection, Series P502, Sheet N1 32-11, Edition 1-AMS, Gabès, Tunisia from Army Map Service, Washington, D.C.) as Rhennouch but which bears the name "Ghanouche" by sign on location. Following a dirt track to the Gulf of Gabès, we parked about 100 yds from the sea and explored the sand dune. Vegetation less than 12" high forms the stabilizing element for the undoubtedly shifting sand. The sand is loose but not fluid. Under a large cement slab at 1330 I uncovered one ♀ adult Acanthoedactylus ^{boeckingi} ~~scutellatus~~ (CMFS 21602) and later in the low bushes I found one Eremias ^{o. olivieri} ~~guttulata~~ (CMFS 21601) active. The air was cool (perhaps $< 60^{\circ}\text{F}$) and a wind probably kept the upper dune cold. Both specimens were encountered in a protected area. An Eremias was seen earlier but not collected due to its speed. Both specimens were preserved almost immediately upon return to station. In the town proper there is a large, circular, cobblestone-like faced, well. The water is $\pm 2'$ deep and filled with alga of a filamentous type which serves the fish as cover. Small minnows are active in the early afternoon as we watch. My population density estimate for inclusive Rana (esculenta?) is ± 25 specimens. Most of the specimens I saw were bright green, a few had mid-dorsal lines, and most were $< 8''$ in body (S-V) length. Maybe we can take some later for positive work and a possible re-identification.

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KETTANA, 8 km. N. on G.P. 1 at Oued es SOURRAE

from 0930-1030 several Rana esculenta seen in fresh rapidly flowing stream. One Acanthodactylus was noted in Eucalyptus grove to S. of Oued. 2 km. SSE at Oued el Ferd on highway G.P. 1, water noted to contain minnows and several deep pits (at least 3) which indicate some degree of permanence. One turtle, which may be Emys orbicularis, was seen. Since I have seen many Mauremys s. leprosa but no Emys, I'm insecure in naming a genus on a sight record. From the splash of color (i.e.: a radiating pattern in yellow on carapace), my guess is Emys. The carapace length was about 20 cm. and the beast traveled through the deep water as well as among the low reeds growing in the vicinity. Several Rana esculenta were heard calling and two (21603-21604) were collected for study. The day was overcast with some sun. No real progress on the project was made although the presence of the turtle leads me to believe that this could be an exciting area and I hope to have a vehicle soon.

15 MAR 72

Maruth, 4 km. ESE at Oued Ziggaw from 0930-1020 several Rana esculenta larvae noted (recent hatchlings) in shallow water. Pond bottom clay w/ vegetation ranging from thick to sparse. Water contains salts in small concentration. Overcast, sun, and heavy SE wind.

low. de-
Medenine
→

since identified
as A. probatilis

Medenine, 28 km. ESE, in area of water shed and artificial levee on BP 1. 1245-1400. ca. 9 Acanthodactylus ~~scaphiopus~~ ^{scaphiopus} seen in area of Rhynchospora suaveolens on both N + S sides of road. To NE of levee, erosion due to overgrazing is taking place. The sand dune formation in this grazed area is well advanced compared

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to the ungrazed portion where drifting sand, although present, is minimal. This area is thought to be one for the IBP's validation area so no specimens may be taken.

Gabis, 2022 under light rain, one Rana esculenta (CMFS 21605) collected N. of city on BP1 before city limits had been passed. This rain started earlier (ca. 1500) this PM and, at present writing, 2300, is still falling. If tomorrow is likewise, the amphibians should be very common!! Temperatures are in mid 50s or, unlikely, low 60s.

16 MAR 72

Managed to get a vehicle for my use this morning. I drove ^{W.} from Gabis on N.P. 16 until it changed to an unimproved road to El Hamma (some 34 km ^{W.}). In order of occurrence, I passed ^{by} ~~the~~ Bir el Krengeria (Bir = well), Bir el Midani, Bir Chennouch, a Fort (on the SW side), and over Ain Sahara (a spring ca. 2.5 km E. El Hamma). The entire road is bordered by desolate, low vegetation areas and occasional palm or Eucalyptus groves. Possibly a good site for night reptile collecting when temperatures permit and I plan on trying for amphibians along part of this road this evening. From El Hamma, I drove to Sembat and noted the road (3 km) from El Hamma to Sembat is well populated and has a few groves of palms to recommend it. 31 km. W of Sembat I turned around and returned to Gabis. The area W. of Sembat also looks to be a potentially good night area for reptiles. How much may live in such arid land will be interesting to discover.

From 2025 to 2141 for Ghislin, George Novikoff, and I drove to El Hamma. The rain had become dry (due probably to heavy evaporation from winds) on the roads and the air was cool-cold

16 MAR 72 i.e.: 60°F . Three (3) Bufo viridis were taken on this trip and the data are as follows:

CMFS 21606,	7 km. W. Gabès on road to El Hamma	(2141)
21607,	10 km. W. "	" (2036)
21608,	20 km. W. "	" (2057)

or 13 km. E. El Hamma on road to Gabès. Nothing else of note except one Lepus sp. on road ca. 10 km. E. of El Hamma. I suspect B. viridis temperature tolerance is rather high as the smallest specimen was taken in area of what ~~is~~ could definitely be called a pre-saharan ecological area.

17 MAR 72 Gabès - rain most of day - cold.

Gabès, 10 km. W. on road to El Hamma at I w/ road to Gafsa and Oudref, one hedgehog seen A.O.R. ca. 2120 hr. One Bufo viridis collected (CMFS 21609-611) A.O.R. 2 km SE Oudref at 2131 hr, another B. viridis taken in OUDREF city limits at 2140 hr. Passed through Methouia and Bou Chamma whereupon I turned NNE to Rhennouch and captured one more adult Bufo viridis within the city limits (CMFS 21611).

18 MAR 72 Kelloua, 2 km. S. on G.P. 1 at Oued el Feul, 1120-1300, 10 $\pm$ Rana esculenta seen in water hole set deep in sand and protected on 3 sides by conglomerate reinforced banks. There are also minnows living in the pond and it appears to be $\pm$ deep. Oued is now muddy and turbulent from the runoff precipitated by last two days of rain.

Gabès, 5 km. SW on G.P. 1 (2) Bufo viridis (21612-21613) taken from highway. Specimens were in amplexus at 2034 hr.

Kelloua, 2 km. S. at Oued el Feul, 2058 hr, and silence on Oued at the moment. The possibility that Bufo viridis breeds here cannot be overlooked -- one specimen heard calling at 2059 hr.

18 MAR	At 2107 a <u>Rana esculenta</u> (21623-21632) collected in stream and from this time till 2150 a series of both <u>Rana esculenta</u> (21623-21632) and <u>Bufo viridis</u> (21614-21622) was taken. Both species are breeding and 2 eel-like creatures were seen in Oued on the E. side where depth is $\pm$ 6 feet.
⇒	Oued EL FERD = GABES, 10.7 km E and 15 km S, 25 M.
19 MAR	Rhenouch (= Ghannouch), area to E. along shore of Mediterranean Sea 1040 - start 1051: <u>Acanthodactylus</u> ^{<u>bohaiensis</u>} <u>scutellatus</u> juv. seen in $\pm$ 500 cm grass west of beach 1100: <u>Chalcida</u> <u>ocellatus</u> (pentadactyl species) (CMFS ²¹⁶³³ 21644 - 21643) collected in chenopods in beach area. The area by the beach is divided into two ecotonal areas by the drifting sand. Behind (= leeward) the dunes is an area of silt-laden sand which bears a large flora of chenopods and grasses. At the moment there is much moisture in the soil and <u>Chalcida</u> appear to be plentiful. As you walk E. to the sea from the chenopod area you pass thru an ecotonal area with low (< 2 M) bushes and grasses. This area yields both a <u>bohaiensis</u> ^{<u>bohaiensis</u>} <u>scutellatus</u> and <u>Cremia</u> ^{<u>o. olivieri</u>} <u>guttulata</u> although the latter appear to be more common where less ground cover is evident. 1105: <u>Acanthodactylus</u> ^{<u>bohaiensis</u>} <u>scutellatus</u> seen in beach. 1117: <u>C. ocellatus</u> (21633 - 21643) adult collected in chenopods. 1122: <u>C. ocellatus</u> collected in chenopods; 1130: 2 <u>C. ocellatus</u> taken in chenopods; 1133: <u>Chalcida ocellatus</u> collected in chenopods. Sunny w/ haze, slight ocean breeze. <u>C. ocellatus</u> taken in chenopods at 1136, 1147, + 1205 (2). At 1210, an adult <u>Acanthodactylus</u> ^{<u>bohaiensis</u>} <u>scutellatus</u> seen in low (< 500 cm) shrub. 1220: Adult <u>Cremia</u> ^{<u>o. olivieri</u>} <u>guttulata</u> (21649-21650) collected while sunning at base of chenopod. 1226: juv. <u>A. bohaiensis</u> ^{<u>bohaiensis</u>} <u>scutellatus</u> (21644-21648)

19 MAR collected in dune area. Other specimens were collected at 1231 and 1236 with sightings recorded at 1230 and 1237 (hill = 500 m. grass). At 1244, an adult *Eremis* ^{*o. olivieri*} ~~*guttulata*~~ (21649-21650) was collected in leeward dune area.

GOUVERNORAT DE MEDENINE

Medenine, 29 km. ESE (at km marker 47), 1552, under overcast skies and w/ a heavy wind, an adult *Acanthodactylus pardalis* (21651-21652) was collected from under a tile on desert floor near the dune-levee. At 1622 another *A. pardalis* was taken from the area under a tile. Both specimens were cold when captured as was the collector at the time!

GOUVERNORAT DE GABÈS

10 MAR Kithra, 2 km. S. on GP1 at Oued el Ferd, 1030 km, sunny and this is really our first really good day! 25-30 *Rana esculenta* heard calling from the pond on W. side. 1100: a juv. *A. ^{b. asper} ~~scutellatus~~* seen on a knoll in center of wheat-field. 1109: juv. *A. ^{b. asper} ~~scutellatus~~* (21653-21659 [97]) collected while foraging on a sandy knoll. 1133: juv. *A. ^{b. asper} ~~scutellatus~~* (21659 [97]) collected from a sand bank while sunning. 1137: Adult *A. ^{b. asper} ~~scutellatus~~* shot at -- missed and specimen went into a hole beneath a large (>1 M.) plant. 1141: Adult *A. ^{b. asper} ~~scutellatus~~* shot at / missed. 1155: Adult *A. ^{b. asper} ~~scutellatus~~* shot in low (1.5 M.) shrubbery in vicinity of Oued proper. 1158: Adult *A. ^{b. asper} ~~scutellatus~~* seen in bush. 1202: juv. *A. ^{b. asper} ~~scutellatus~~* seen sunning; 1205: juv. *A. ^{b. asper} ~~scutellatus~~* seen sunning in low sand area; 1206 - 2 juv. *A. ^{b. asper} ~~scutellatus~~* collected; 1215 - juv. *A. ^{b. asper} ~~scutellatus~~* collected near a highway on a sand bank with *Juniperus* and *Junon* like plants. 1224: 2 Adult *A. ^{b. asper} ~~scutellatus~~* shot in area of *Juniperus* (?) sp. and low ground cover; 1228: juv. *A. ^{b. asper} ~~scutellatus~~*

20 MAR taken in area of low ground cover. 1236: juv. ~~*A. scutellatus*~~ ^{*A. asper*} taken in area of low ground cover. 1242: *Rana esculenta* (21660-21675) collected. 1250: *Natrix maura* (18P specimen) collected at bridge on broken concrete. One larger specimen seen in conglomerate but was unable to pass hand through the wire mesh and did not take the specimen. The *N. maura* collected was in ecdysis (eye cloudy, presumed just starting). 1302: adult ~~*A. scutellatus*~~ ^{*A. asper*} (21653-21659[97]) shot and 2 juveniles seen. 1304: One juv. ~~*A. scutellatus*~~ ^{*A. asper*} taken sunning in sand. 1307: juv. ~~*A. scutellatus*~~ ^{*A. asper*} seen but not taken // taken at 1305. 1312: *Chamaeleo chamaeleon* (18P) collected on high (> 2m) bushes in gulch area. 1321: 2 ~~*A. scutellatus*~~ ^{*A. asper*} adults shot; 1331: ~~*A. scutellatus*~~ ^{*A. asper*} shot in open sand. 1340: 2 *Natrix maura* seen at concrete bridge but both escaped. Rhennouch (= Ghonouch), seaside area of *Juncea* like grass, chenopods, and wet sand. 1530-1730 hr. 1539: 2 ~~*A. scutellatus*~~ ^{*A. asper*} juv. seen in chenopods. 1544: *Eremias* ~~*guttulatus*~~ ^{*o. olivieri*} (21681-21685) collected in chenopods and at 1546 another *E. o. olivieri* ~~*guttulatus*~~ near a fresh-water stream in chenopod area. 1553: *E. o. olivieri* ~~*guttulatus*~~ caught in low (.5m) bush in dry sand. 1605: 2 *Chalcid* *ocellatus* seen in chenopods. 1609: a *C. ocellatus* (21676-21680) caught in chenopods. 1611; 1613; 1616; 1620; 1624; 1627; 1635; + 1640, *Chalcid* *ocellatus* (21676-21680) either seen or collected in area. 1650: *E. o. olivieri* ~~*guttulatus*~~ collected along sand area of *Juncea* (?) - like plant very near the beach. 1656: *E. o. olivieri* ~~*guttulatus*~~ collected; 1704: *E. o. olivieri* ~~*guttulatus*~~ collected in chenopods (21681-21685) and at 1713 a *Bufo viridis* and tadpole were found in a pond behind the Ghonouch (SATVR) Hotel which is now under construction. *Bufo hatchingi* also seen (2).

20 MAR

Keltana, 2 km S. at Oied el Ferel 2030-2130.

Several Rana esculenta (21660-21675) collected in Oied which appears to be settled now after some violent rains. The main pond in which these Rana were calling contains a substrate of clay and/or much soil. When one steps into, or close to, the shoreline or water, traction is difficult to maintain. The pond is $\pm$ 1.0 m. deep and the bottom is lined with a firm (not alga) type plant resembling water cross/cleopods or something of that sort. The calls from the Rana are loud, distinct, and the lack of Bufo on this night in this part of the Oied is noteworthy. Since, however, Bufo were present on the E. side of the highway, one can assume that the species isolation mechanism of the calls is complete and functional. The moving water source (10-15 feet to N.) which feeds the main pond contained not as many Rana but one Clemmys (= Mauremys) rapida (187 specimens) was collected. Nothing much of note here except that the sand substrate of the moving water was firm and relatively easily walked upon. There are, also, leeches noted in the moving stream although more were seen in the quiet pools bearing lum. While Bufo were calling from afar, none were taken this evening. The eel-like animal of a while back was still, apparently, foraging in the deep pit of the Oied. Also in this pool, although on the more shallow N. end, were 3 ~~Clemmys~~ Clemmys (= Mauremys) rapida (CMFS 21686-21688) which were collected (2 ♂♂, 1 ♀). On the NE corner, a large Natrix maura (21689) was collected while it was feeding on small minnows in the Oied. It becomes increasingly interesting to me that this one Oied should have such an abundance of herpetological specimens. Hope to do more here later!

21 MAR

changed on
basis of
longer series
+ more observed
thin specimen
climbs rocks!

El Hamma, approximately 1 km. E. on road to Gabis, at bridge, stopped and surveyed Oued bottom. at 1054, I collected what I now believe to be an ^{Cremis}~~Acanthodactylus~~ savignyi on the basis of 8 rows of ventral plates (mid-body) and a sub-ocular which borders the mouth. At 1100, another specimen of the species was collected and both now bear CMFS #s 21690-21691. Under some of the larger rocks (= conglomerate + some gypsum) there is still some moisture present (i.e.: a dampness in present but not to be expected to last too long). At 1104 a Bufo viridi (18P specimen) taken from under a large rock and at 1110 a ^{smaller} ~~large~~ Bufo viridi (CMFS 21692) was taken from under a very large rock in damp-wet sand. At 1115, a specimen believed to be ^{Cremis}~~Acanthodactylus~~ guttulata savignyi (Auroum) took refuge under a rock too large to be moved.

SEMBAT (ca. 3 km. W. El Hamma), 8 km. W. on road to KEBILI and to the S. of that road in area of a large Oued, and, consequently, a bridge and gypsum quarry, I stopped to survey the bed. About 1/4 mi. S. of the highway there is a pool enclosed, in part, in gypsum. This water hole could possibly support turtle life and does, in fact, contain Rana esculenta. One would suspect from the depth (> 2 M.) that the water-hole, per se, is permanent and sustains life in addition to the frogs present.

Mouth, 3 km. ESE at Oued Zig Zoun, 1537-1750 m. Area of Oued with large stones embedded in sand forming what would be expected to be the main waterway. The ponds which are still retained to the W. of the highway are protected on the S. by a conglomerate reinforced (ca. 4 M.) escarpment/pricing.

21 MAR

I collected in the area of the one vernal (= clay lined w/ some overhanging vegetation) pond. 1542: One Bufo viridis (21693) taken under a rock in moist sand, the specimen, although obviously moist enough, seemed drier than most I've taken this last week. 1544: An Acanthodactylus ^{b. asper} ~~scutellatus~~ juvenile (21694) taken in open sand to W. of highway. These A. ^{b. asper} scutellatus appear to prefer a small hole of sand or habitat when they're not confined to a brook type environment. 1552: 2 A. ^{b. asper} scutellatus juv. seen under rock in area of one skittle, one captured (21695) and one escaped. 1557: 3-5 Rana esculenta adults seen along w/ numerous tadpoles in pond of sand substrate. Pond is protected on S. side by a high, natural, wall of conglomerate. 1603: A. ^{b. asper} scutellatus juv. seen in conglomerate area. 1608, 1614, 1626, + 1630: Acanthodactylus Cumia g. guttulata ~~saigayji~~ (21696 + 1 for IBP) taken on conglomerate, seen sunning on conglomerate, or seen in cover of heavy thorns. This species seems more like Tarentola than Acanthodactylus in the manner in which it climbs upon the rock. Perhaps I have misidentified a whole genus (?). 1641: an adult Tarentola mauritanica seen in conglomerate. 1650: another E. ^{b. asper} saigayji seen on conglomerate; 1700: one Tarentola mauritanica seen on conglomerate near pond; 1705: one T. mauritanica seen on pond's conglomerate of S. edge; 1712: found several strings (tight woven, narrow string) of Bufo viridis eggs in shallow water to the E. end of the small pond. 1735: T. mauritanica (21697-21700) shot in bunker on hill to N + E of Oiled proper. 1745: T. mauritanica (IBP specimen) taken live in "Free French [1943]" bunker and at 1748 another was seen.

21 MAR

Teboulbou, 2 km S.E. at Oued es Sourouy (4.00 km E. and 6.50 km S. of Gabir) one *Natrix maura* seen D.O.R. on highway G.P.1 (ca. 1800).

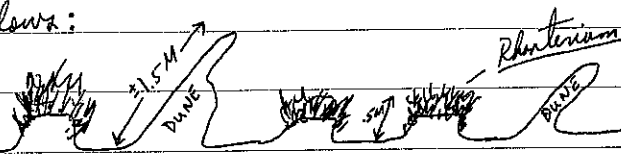
22 MAR

Asouinet, 1 km. N. and 3 km. E. (ca. 15 km. N. + 3 km. E. Gabir), on beach area with a ca. 5 mph wind from W. and a clear sunny sky. 1030: 1 *Acontalactylus* ^{*h. asper*} ~~*scutellatus*~~ (21703-21714) shot in high (± 2 M.) vegetation along coastal dune. 1032: One *Chamaeleo chamaeleon* (21701-21702) taken from low (< 5 M.) legume (?) in windward sand dune. 1034: 2 juv. *A. ^{h. asper} scutellatus* seen in sand; 1036: *A. ^{h. asper} scutellatus* adult shot in sand; 1041: *A. ^{h. asper} scutellatus* juv. seen; 1045: 2 adult *A. ^{h. asper} scutellatus* shot; 1051: *A. ^{h. asper} scutellatus* adult shot; 1056: *A. ^{h. asper} scutellatus* adult shot; 1058: juv. *A. ^{h. asper} scutellatus* seen; 1100: juv. *A. ^{h. asper} scutellatus* taken in sand; 1104: juv. *Chamaeleo chamaeleon* taken while it was walking across sand; 1109: adult *A. ^{h. asper} scutellatus* shot in open sand; 1112: *A. ^{h. asper} scutellatus* adult shot in sand / low shrubbery; 4/5 *A. ^{h. asper} scutellatus* juv. seen from 1112-1132. 1135: juv. *A. ^{h. asper} scutellatus* seen; 1138: small *A. ^{h. asper} scutellatus* shot in sand; 1142: *A. ^{h. asper} scutellatus* adult shot in sand; 1150: 2 *A. ^{h. asper} scutellatus* juv. seen in dune.

23 MAR

GOUV. DE MEDENINE.

Medenine, 28 km. E. at Km. 48 of G.P.1 (25.6 km. E. + 4.5 km S [50 M]) in area of partial dunes separated from ungrazed national forest by a sand levee. A typical transect of the terrain is as follows:



and it should be noted that the dunes are of loosely laid down, fine grain,

23 MAR 72

sand. The afternoon was hot w/ a slight breeze and from our arrival at ± 1321 hr until departure ca. 1700, (6) Acanthodactylus pardalis (CMFS 21715-21719) + (7) BP specimens were collected. The exact data are as follows:

1321 - A. pardalis shot; 1357 - A. pardalis seen in dune area near drift fence; 1413 - A. pardalis shot in dunes; 1422 - A. pardalis shot under Rhantidium sp.; 1430 - 2 A. pardalis seen; 1434 - A. pardalis shot in sand mound w/ vegetation on top; 1440 - adult A. pardalis seen in open sand; 1446 - A. pardalis seen in sand mound w/ Rhantidium; 1456 - subadult A. pardalis shot under Rhantidium sp.; 1500 - A. pardalis collected in open sand of dune area; 1515 - A. pardalis seen in dune/mound w/ Rhantidium.

24 MAR 72

Medenine, 25.6 km E. + 4.5 km S. (50M), from 0700-0800, Jon Ghiselin and I checked for traps. 1 jaculus deserti ♀ was taken (Rodentia: dipodidae) with ~~at~~ trapline of 60 traps on the 23RD and 50 on the 24TH. [Circen: 50 trap nights]

Started at 1950 hr on a course to take me from Gabis W. to El Hamma (28 km W of Gabis), Sembat (31 km W. of Gabis), Bordj Saidore (74 km W., 14 km S. of Gabis), and into Limaguess (93 km W, 12 km S). Data to follow are in road kms as measured by Land Rover's odometer: 2005 hr, 1 km. NW of Gabis (at Road to Intra) one Bufo viridis (21722-21730) collected in a light shower. 7 km W at 2014 hr another B. viridis was taken (21722-21730). 18 km W a DOR B. viridis was noted. 26 km W in heavy rain an AOR B. viridis noted and 2 AOR B. viridis were collected.

El Hamma, city limits in heavy rain 2 AOR Bufo viridis were collected and 2 km. W. 2 AOR Rana

24 MAR 72 esculenta (CMFS 21720-21721) were collected. 4 km W. in rain another Bufo viridis (²¹⁷²⁰⁻²¹⁷²¹~~21731-21735~~) was taken.

Sambat, 2 Bufo viridis and 1 Rana esculenta were seen at 2110 in rain. Both specimens in road w/ much surface water. 29 km W, 2150 hr, an AOR Bufo viridis (21731-21735) collected and at 2209 hr, 41 km W, another B. viridis was taken AOR.

Bordj Saidane, 2227 hr, 13 km W a Bufo viridis (21731-735) collected AOR.

Jenagüess, city limits, 2238 hr, 2 Bufo viridis (21731-735) collected AOR and survey terminated

26 MAR 72 Gaber, (2.5 km W, 6.0 km N) at Rharouch, 1243 - 1430, a series of Chalcidus ocellatus (21738-21747), Eremia ^{o. olivieri}~~guttulata~~ (21737), and an Acanthodactylus ^{b. asper}~~scutellatus~~ (21736) were taken. The following are the times and circumstances as abstracted from original notation:

Chalcidus ocellatus collected at 1252 (Chenopod), 1256 (Chenopod), 1258 (in low L 200 mm. plant), 1300 (in Chenopod), 1306 (Chenopod), 1309 (Chenopod), 1311 (Chenopod), 1317 (Chenopod), 1336 (sandy soil w/ Chenopod $\pm$ 100 M. W. of beach), 1339 (juv in misc. small shrubbery ca. beach). C. ocellatus noted at: 1254 (Chenopod), 1312 (E in Chenopod), 1319 (juv in Chenopod), 1341 (juv in misc. small shrubbery ca. beach),

Eremia ^{o. olivieri}~~guttulata~~ (21737) taken at 1330 in low ($\pm$ 8 inches) sparse vegetation in sandy soil close to shoreline.

Acanthodactylus ^{b. asper}~~scutellatus~~ (juv) (21736) collected in low shrubbery 150 yds. from ocean side at 1350 hr.

Drove in a N. direction following a dirt path which

26 MAR 72

1/5 the shoreline for much of its distance about 5 km (odometer reading) until a dune area with sparse vegetation, shifting sand, and $\pm$ 25 palm trees appeared to the E. While walking through the periphery and center of one dune at 1419 hrs, a juv Acanthodactylus ~~multicinctus~~ ^{to asper} was seen. At 1424 hr, another specimen (juv. also) was noted on leeward side of dune in loose sand. Tall grasses and Juncus (acutus??) are present in this area. Proceeding along the dry lake bed in a $\pm$ NW direction for ca. 1 km. brought me to a palm grove. At 1442 a Chalcida scellatus was seen in the oasis area and at 1447 another was seen near a small permanent pond which was inhabited by small minnows. The deep pool (photographed) at the N. most end of the W. side contains Rana esculenta and a dead Natrix massena was found under a fallen palm trunk. At 1455 a Chalcida scellatus was seen in a low shrub. Driving $\pm$ WSW, I came back to the Gabier - Aquinet Road at 1 km. Post 120 approx. even w/ the RR crossing. 13 km NW Gabier (by road) and just S. of that RR crossing a D.O.R. Natrix massena was seen. Returned to this area to set traps and an Cnemidophorus (?) was seen in open field to SE of Palm Grove. At 1655 a Chalcida scellatus (21748) captured under palms in E. end near secondary palm grove. 25 rat and 25 museum specials were set out by me.

27 MAR 72

Gabier, 11 km N. + 6 km. W at Palm Grove (ibid) at 0815 under sunny and partly overcast skies a Ruby-throated bird collected in one of last night's snap traps. 0840 - a Chalcida scellatus was seen lying in sun beneath Spergularia. A Mus musculus (Rodentia) was taken under Tamarix in a museum

27 MAR 72	special. 0852 - a <u>Chalcida ocellatus</u> seen sunning atop tall (>8") grass which may be <u>Juncus acutus</u> and at 0855 another <u>Mus musculus</u> taken in open area of chenopods. From 0915 - 1410 we remained mired in mud. First tractor arrived at 1410 and became stuck also. It was later than usual when we returned to the villa where Georges Novikoff and Frederick H. Wagner waited for our arrival.
28 MAR 72	Gabès, 10.7 km. E. and 15 km S at Oued el Ferel from 1255 to 1447. $\pm$ 20 <u>Rana esculenta</u> seen (and heard) in pond. Another deep pond (there are about 6 W. of the highway) found containing <u>R. esculenta</u> and tadpoles probably of <u>Rana</u>. It impressed me that, since no Bufo were seen here, that perhaps the calls are effective enough to ensure complete species isolation in this area. A young <u>Discoglossus pictus</u> (CMFS 21750) found in <u>Salicornia</u> (for Ghislini's identification) [chenopods] at 1316 hr. 2 <u>R. esculenta</u> seen in pond further W. with $\pm$ 1,000 tadpoles at 1400. 50 ($\pm$) <u>Rana esculenta</u> heard (and seen) calling from a large (ca. 30 M. x 50 M) pond. 1431: a juvenile <u>Natrix maura</u> (21753) taken from beneath a rock along the fast-moving stream to the E. of the road. 1434: <u>Premia g. guttulata</u> taken (21751-21752) from along the stream bed while a 2nd specimen retreated to <u>Juncus</u> [<u>acutus</u>?] root area. 1439: <u>E. g. guttulata</u> collected in chenopod near the S. conglomerate-faced wall. 1447: left area. Gabès, 2.5 km W. + 6.0 km N. at Rhennouch. Collected from 1610 - 1655 hr. 1617: 2 <u>C. ocellatus</u> seen sunning in chenopod. 1620: <u>Premia o. olivieri</u> captured (CMFS 21754-21756) away from immediate beach area. 1623: <u>E. o. olivieri</u> (21754-756) captured in <u>Salicornia</u> (?) near beach. 1625: <u>E. o. olivieri</u> captured

28 MAR 72 in Salicornia (?) in area mixed with juncus and near sand dune area of beach. 1626: Chalcida ocellatus (21757-21761) captured while sunning in chenopod. 1629: C. ocellatus (21757-761) taken in chenopod area. 1633: C. ocellatus seen in chenopod/juncus area. 1638: C. ocellatus captured in juncus. 1643: C. ocellatus captured in tall juncus near beach. 1646: C. ocellatus captured in chenopod W. of beach and at 1649 a Lepus sp. was seen in the area of grass just W. of beach's sand dunes.

29 MAR 72 Sabir - El Hamma - Douz - Ksar Rhilane - El Hamma - Sabir. Dr. Ghiselin, Dr. F. H. Wagner (Utah State), Dr. Novichoff, and I traveled on a sort of Safari to see the preliminary shifting sand dunes of the Sahara. The trip was adequately covered in Kodachrome II and Bloch + White (roll I, 1972). For specimen and relevant herpetological data, the following:

Steptimi, 1 km S, 1137, 1 Acanthodactylus boskianus asper (CMFS 21762) collected in artificial, raised, well w/ brackish (Wagner) water and tall grass. The specimen was sunning in low shrubbery within the well compound.

Douz, 25 km SE (Sabir, 68 km W + 85 km S) one Acanthodactylus pardalis (CMFS 21763) collected in association with Antillar aenoniensis (Léonum) in loose, sandy soil at 1325 km.

30 MAR 72 Set trapline at 11 km E and 6 km W of Sabir (approx) in Palm grove W. of mapped dune area. 51 traps were set S. and 49 set E.

31 MAR 72 Sabir, 11 km E + 6 km W, collected 2 Gerbillus gerbillus (♂ + ♀) in trapline to S. and 2 G. gerbillus (♂♂) to E. Jon Ghiselin in taking care of mammal preparation and should

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have more sufficient data RE: these specimens.

2.5 km W + 6.0 km N at Rharrach from 0555-1220

another series of specimens were taken. This basic coastal dune area is composed of a brief shoreline (< 50 yds) followed by a series of low (< 5 ft) relatively stable (from vegetation - a not unlikely inference) dunes. The dunes are covered by a grass of some sort and are backed up to the W. by a low area of chenopod and junceum. At the present, the chenopod area is extensive and the sand is moist - wet beneath apparently affording some good ground for Chalcid which are probably breeding at this time. While Chalcid seems to be more common in the chenopod, it is in no way restricted to them. Likewise, Cremator & olivieri which previously had been found between the dunes and the chenopod appears to extend onto the dune area and into the periphery of the chenopod where they (the chenopods) are thinnest. Ananthodactylus boschianus asper, as expected, is almost exclusively found in the tall grass of the dunes although juveniles do seem to wander as far off as into the outer peripheral limits of the so-called (Shirley) Salicornia. A table of collecting data follows:

Chalcid ocellatus (+ = captured, - = missed, i.e. seen)
(CMFS 21764-21780)

1009, 2 - in chenopod; 1011, 2 + in chenopod;
1015, 1 + in low (< 5") grass; 1025, 1 + in junceum; 1027, 1 -
in junceum; ~~1032~~ 1055, 2 + in chenopod; 1058, 1 + in stream
bed area of chenopod; 1101, 1 + in chenopod; 1104, young +
in chenopod; 1127, 1 + in junceum/tall grass area; 1128, 1 + in

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chenopod; 1131, 1+ in juncus/chenopod; 1135, 1+ in chenopod
 1137, 2+ in chenopod; 1139, 1- in chenopod; 1141, 1- in chen-
 opod; 1150, 1+ in chenopod; 1159, juv. - in chenopod;
 1217, 1+ in chenopod.

Emmias o. oliveri (CMFS 21781-21782): 1109, 1+
 along dirt path; 1215, 1+ in open sand

Acanthodactylus boschianus asper (CMFS 21783-21787[8]):
 1032, 1+ in sparse, tall ($\pm 12"$) vegetation on sand near dune;
 1034, 1+ in juncus; 1045, 1- in tall grasses; 1116, 1 adult -
 in low shrubbery; 1118, juv - in open sand; 1119, juv - in
 low ($< 4"$) bush; 1120, juv + in low ($< 4"$) bush; 1122, juv -;
 1124, juv - near palms; 1134, ad + in chenopod; 1143, juv -
 in sand; 1147, adult - in chenopod area; 1153, adult - and
 juv + in sand; 1158, 2 juv + in sand; 1200, juv + in
 sand; 1204, adult + open sand; 1206, adult +, juv - in
 open sand; 1212, 2 juv + in sand.

Small pond to S. of normal area found to be
 lined w/ juncus and filled w/ surface alga. Several tadpoles
 seen within the pond and ± 10 Rana esculenta were
 observed within the pond.

10.7 km E + 15 km S of Taber at Oued el Fend,
 1500-1630, 12 Rana esculenta in first pond to W. of highway.
 Water receding at rate of ca. 6"/day as indicated by shore-
 line. 1530-1545, 2 small Mauremys caspica lyron
 seen and 2 Tarentola mauritanica (21788-21789) collected
 at pond to S. of the major feeding stream for the Oued. The
 pond is about 4' deep at the center, 6' across and about
 12-15' in length. Lining its southern side is a wall of

31 MAR 72 conglomerate (see photo, roll #2-72). At 1612 on the E. side of the highway, I was presented w/ an Acontodactylus boskianus asper (21792) and an Eremias g. guttulatus (21791) by local children: the Eremias has a crushed skull so the identification characteristics; i.e. scale composition of orbit, cannot be clearly seen. At 1618, while turning rock in the vicinity of the stream, I upturned a Rana esculenta (21790) under a rock.

01 APR 72 1930-2126, Drove the road from Gaber SSW (Rt 17) to Matmata and returned. In spite of a rainfall of moderate proportions, no amphibians were seen on the highways; 2 jaculus (Rodentia: Dipodidae) deserti (?) were seen A.O.P. on highway about midway between Matmata and Gaber.

02 APR 72 It's an intermittently sunny day with high winds.
(EASTER SUNDAY) Gaber, 2.5 km W, 6.0 km N. at Khrououch from 0907-1057
I am surveying the beach to the S for additional habitats while fighting blowing sand and very heavy winds (normally placid sea has white caps and heavy surf). 0916, Chalcida ocellatus seen in chenopods while sunning itself. 0923, C. ocellatus seen sunning on a dirt bank ca. small shrubs. 0934 - C. ocellatus seen sunning in chenopods, 0937 another C. ocellatus seen sunning in chenopods, 0938 a C. ocellatus juvenile seen sunning; 0942 a C. ocellatus (CMFS 21793-21794) collected in chenopods.

From this point until ca. 1015 hr, I walked the N. bank of a rapidly moving stream emptying into the sea. The pools contain many small (minnow size) fish and an occasional Rana esculenta was seen. Because of the winds (perhaps) nothing else except for 2 swallows was noted.

02 APR 72

1031, an Acanthodactylus boshianus asper juv. was seen sunning in the sand near the area of high (12" ±) grasses close to both the main road to Rhennouch and the beach. 1044 - a C. scellatus was seen in chenopod and at 1046 a large C. scellatus (CMFS 21793-21794) was collected in furcus.

Cherini (Banis in Oasis on NE side of Gabi) yielded one D.O.R. record of a Natrix maura at 1125. The oasis may bear some close inspection regarding herpetofauna: I suspect Sekoniidae may be rather abundant in the area. The road leading through the Oasis is lined, on alternate sides of the road, with an irrigation stream of water. This stream, where it pools - and it appears to pool frequently, has a base of white sand which reveals the water to be very, very, clear.

03 APR 72

Gabi - Mouth - Beni Zeltene - Tadjone - Matmata - Gabi.

Beni Zeltene, 2 km S.E. on dirt path, one juvenile Tarentola mauritanica (CMFS 21795) collected under a rock along exposed road shoulder at 1425. The day was basically clear, sunny, and w/ a high wind for most part. Later (ca. 1600) the skies turned cloudy and the cold wind was most distressing. Our trip was over rough passable but not what one would care to spend many hours on. The hills in this area are, around Tadjone, covered w/ talus and scrub vegetation. As you drive to Matmata from Tadjone you pass many troglodytes, an occasional olive grove, and much barren, overgrazed, eroded hillsides.

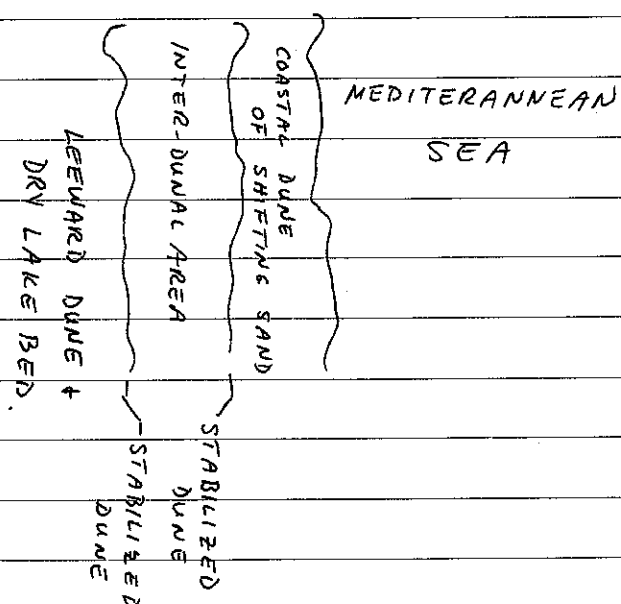
05 APR 72

GABES, 4.4 km W and 12.6 km N (= Rhennouch, 7 km. by dirt road // to ocean) surveyed. The area which is to be surveyed as completely as possible has the following constitution:

05 APR 72

Aine =
Spring

It is bordered on both N. and S. by streams of brackish water, on the W. by the dirt road, and on the E. by the Mediterranean. If my interpretation of the map (see p. 6 this vol) is correct, this is the southernmost section of the "SKRET ER RAHIA" (= sand dunes name) which is bordered on the N. by the flow of "Aine Ghaurat" and on the S. by the flow of "Aine el Keltane" but is not restricted to these borders. I have decided herein to delineate further this "chunk" of coastal dune area and my allocations of habitat type are indicated on the following map:



but are not so clearly delineated in nature (obviously!). The interdunal area is a depression containing some palm trees and much ground cover. Thicket with heavy thorns form the basis, and largest % vegetation of co- sequence whereas annual grasses, chenopods, and Zygophyllum with Tamoxix are certainly not rare. (see photo). Also noticeable are several, apparently active, rodent burrows in the area (most in mounds protected by thicket), several

05 APR 72 mosquito, and a ground-dwelling (and feeding) bee of large numbers.

The stabilized dunes are elevated to form the borders of this inter-dunal area and contain very sparse vegetation, loose sand, and little else. The vegetation is, once again, the thorny thickets type bush and annual grasses.

The Leeward Dune/dry labeled is a transitional area which contains much of interest. From the bottom of the dune, we see a gradual shift in soil type from basic sand to a silt, mud-like, almost, topsoil with a heavy clay component. Vegetation is, again, Zygophyllum and a few thickets. Palm trees are present, but well scattered. (Photographic series should have this, see roll #2-72)

NOTES ON SPECIMENS FOR 5 APR 72:

A 3 1/2 - 4' snake of a reddish-brown tint seen retreating into a mammal burrow near a thicket between 1600-1630. While digging out the burrow used at first, the snake escaped over the top of the mound in the inter-dunal area into another hole from which it could not be collected. On sight identification: Naja h. haje. Eumias o. olivieri and Acontodactylus h. asper were also seen in the area.

6 APR 72 Gabis, 4.4 km W + 12.6 km N Gabis (Rhenssnel, 7 km N), from 0940. Today is clear and sunny with a soft E. breeze and in what one could call fairly warm after the cold spell we've seen recently.

0945 - One adult ♂ Naja h. haje. (21805) collected in leeward dune/dry lake area while crossing

6 APR 72

the dirt road into the lake area proper. It was shot immediately prior to its descending into a large, mounded, mammal burrow from which it was pulled (by hand), shot again, and bagged. (TL = 1848 mm; Tail = 206.3 mm; SV = 158.3 mm)

0948 - Acanthodactylus boshianus asper (21796-21802)

taken interdunal area

0951 - A. asper (21796-802) collected on ^{stabilized} dune to E.

1030 - Shell of Testudo graeca found, but discarded, in thicket. When picked up, the shell disintegrated and was not saved.

1042 - Eremia o. olivieri (21803-21804) taken from shifting sand/coastal dune and at 1044 another E. o. olivieri taken in same area in open sand.

1047 - A. asper (21796-802) shot in sand/thicket in inter-dunal area. 1106 - juv. A. b. asper seen in tall grass in E. inter-dunal area. 1107 - A. b. asper (21796-802) adult shot in thicket in sand of leeward/dry lake area.

1120 - A. b. asper (21796-802) shot in thicket inter-dunal area. 1123 - A. b. asper shot in thicket inter-dunal area, 1125 - A. b. asper shot in thicket inter-dunal area, 1135 - dug out thicket in search of a Naja which escaped into a mammal burrow -- this time the result was negative. Naja has been positively found in both leeward/dry lake and inter-dunal areas - further research into faunal constitution of the area would be interesting! (departed ca. 1200 N)

1630 - returned to area again. 1707 - a

Natrix maura (21806) collected inter-dunal area in tall grass. Set 50 snap-traps in this area. at 1830 -

Ali Dahri presented me w/ another N. maura (21807) which

6 APR 72 had been taken from the leeward - dry lake area. (1400-departed)

7 APR 72 Dunes, 4.4 km W + 12.6 km N, 0800 - arrived to check both my traps. 50 trap set S. of marsh to W. of road in, ca., center of area studied yielded nothing. 0830 - 50 trap set in inter-dunal area yielded nothing. 0845 - A. b. asper ^{juv.} seen sunning. 0856 - adult A. b. asper (21810-21820) shot inter-dunal area in loose sand on E. side. 0924 - a small snake (probably Natrix maura) disappeared into the under portion of a large Juncus. 0946 - A. b. asper (adult - 21810-820) shot in thicket of leeward / dry lake area. 0951 - A. b. asper seen in thicket; 0958 - adult A. b. asper seen in thicket, 1000 - inter-dunal area - 1005 of beer seen traveling low to ground in area of clover-like purple plant, ± near a palm grove (3 trees!). 1012 - A. b. asper seen in open sand; 1032 - returned to leeward / Dry lake area of small pond in ± center of 2 streams' delimitation, and one Scrubwren (scrubwren?) seen and one A. b. asper (21810-820) collected. 1039 - A. b. asper shot in thicket near the marsh, 1047 - A. b. asper subadult shot in thicket, 1050 - A. b. asper taken in tall grass, 1057 - inter-dunal area; A. b. asper shot, but not saved (too close w/ the .22!), in thicket along N. most end; 1111 - Chamaeleo c. chamaeleon (21821-21822) taken in tall bush in sand dunes, bush ca. 12" high and in stabilizing element for edge of large dune - specimen colored well enough to almost match the plant! 1115 - A. b. asper (21810-21820) adult shot open sand; 1120 - A. b. asper adult seen in marsh w/ thicket;

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1129 - A. b. asper adult shot in open sand; moved to leeward / Dry lake area. 1129 - @ chamaeleon (21821-21822) taken from small (< 12" T) clump of grass; 1140 - juv. A. b. asper seen in open sand; 1145 - Testudo graeca (21809) collected in low thicket; 1159 - A. b. asper adult shot in low thicket on mound; 1200 N - a hissing noise accompanied by movement heard from a low (< 3' T) mound covered w/ thickets and $\pm$ 4 rodent burrows. When dug out, a large Varanus g. griseus (CMFS 21808) was collected. The entrance to the first burrow seen was about 12" across and 8" high at maximum ^{8" h} _{← 12" →} operation. The Varanus was unearthed in about 9" of soft, moist, sandy soil. It is, I think, ^{YES!!} ♂.

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Sahar, 4.4 km N + 12.6 km N, 0745 - on leeward / Dry lake area. Marsh side trapline yielded a Mus musculus and a Gerbillus gerbillus (RE: Jon Ghiselin) in trap. 0754 - a Chalcida ocellata seen in Salicornia area at N. edge of marsh. When approached, it "swam" through about ~~3~~ ^{3 ft.} of shallow (< 2") water. 0900 - A. b. asper ^{adult} seen running; 0902 - A. b. asper adult shot (21824-838) in tall grass on a mound; 0911 - A. b. asper shot in open sand; 0913 - Eumia o. olivieri adult taken on leeward dune in high grass (21839-843); 0922 - A. b. asper (21824-838) shot on side of dune; 0931 - E. o. olivieri (21839-843) taken in Zygophyllum; 0934 - E. o. olivieri collected in tall (> 12") grass; 0937 - A. b. asper collected in tall grass; 0940 - A. b. asper juvenile collected on dune;

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0948 - A. b. asper subadult collected on dune; 0958 -A. b. asper subadult and Cnemid. o. olivieri seen in chenopods along water's edge to S. of dune; 1010 -A. b. asper adult shot in high grass/sand; 1015-1025 = dry Varanus g. griseus (21823) from burrow. This burrow was not located in a mound, but, rather, looked to be self-constructed on flat-plain of dry lake bed.

note = hole was about 6" x 4" (which it was) and the lizard was collected at a depth of $\pm$ 8" from surface level and about 14" back from original hole where sighting was made. 1028 -

A. b. asper juvenile seen in open area of dry lake.1031 - Cnemid. o. olivieri (21839-21843) taken in thicket.1040 - C. o. olivieri (adult) taken in Juncus area; 1048 -2 A. b. asper seen, 1 juv. taken (21824-21838) in thicket.1051 - A. b. asper ^{juv} taken in grass; 1059 - Small blackish snake (2 1/2 - 3') retreated to hole in W. wall of large dunew/ thicket stabilization; 1102 - A. b. asper shot under palm;1107 - A. b. asper taken open area of sparse, but tall, grass;1110 - A. b. asper juv seen; 1115 - C. o. olivieri seen nearmarsh in tall grass; 1119 - Rana scalabrini seen in areaof marsh; 1121 - A. b. asper shot in open sand; 1126 -A. b. asper shot in thicket. Moved to Inter-dunal area:1130 - A. b. asper juv taken in open sand1135 - A. b. asper adult shot in open sand

1200 - END : 1745 re-survey from 1530-1745

yielded nothing but a sight record of a Varanus burrow

8 APR 72

to the N. of the marsh $\pm$ 500 feet. Appeared to be active (tail impressions still in sand).

Gabis, 10.7 km E + 15 km S. at Oued el Ferel from 2150 - 2230, immediately upon arrival, 2 small, brownish (w/ white underside and some lateral white) foxes w/ long ears and blue-green eyeshine seen. One Rana esculenta (21844-848) captured in pond on W. side of road and closest to road. It has now receded to the point of being ca. 5' across at widest point and $\perp$ 3' across at narrowest. Bottom still much silt and w/ algae.

2157 - a large adult Maurus caspica leprosa (21849-51) collected in widest portion of pond (ibid). From 2205 - 2230, 2 more M. c. leprosa (21850-51) were collected in this same pond while a yellow-eyeshined beast seemed to follow my movements about the pond. The E. side of the pond, along the bank of the rapidly moving stream, resulted in the collection of 4 more Rana esculenta (21844-21848). While crossing the stream (more in an effort to clean my speaker than anything), a Natrix maura (21852) was collected as it lay on a bed of algae // to the direction of flow + w/ its head ^{pointing} in the direction of flow.

9 APR 72

Gabis, 2.5 km W + 6.0 km N, at Khennouch beach.

0945-1056. 0947: Cremias o. olivieri ⁽²¹⁸⁵³⁾ collected in dunes; 0958: Chalcida scellata (21854) adult collected in chirogods; 1014 - Acanthodactylus boskianus asper juvenile seen in chirogrod area; 1016 - A. b. asper ^{adult} seen in chirogrod area; 1018 - Chalcida scellata juv. seen in chirogods; 1024 - Cremias o. olivieri seen in thicket/dunes; 1026 - C. scellata adult seen in dunes;

9 APR 72	1028 - large series <u>Rana esculenta tadpole</u> seen in deep ($\pm 6'$) pool of brackish (taste) water in dunal area; 1037 - <u>A. b. asper</u> seen in chenopod area; 1043 - <u>A. b. asper</u> juv (21855-21856) collected in dune area; 1049 - <u>A. b. asper</u> adult taken (21855-21856) in garbage heap W. of coastal dunes.
10 APR 72	Rain most of day: cold + w/ heavy wind. Chenini at 1945 hrs one <u>Bufo v. viridis</u> collected A.O.R. (21857-21859). Drove from Gabès to El Hamma (1945-2024 hrs) seeing nothing under cold winds and a heavy rain. Gabès, 7 km W, A.O.R. on road to El Hamma, the largest of the <u>Bufo viridis</u> (21857-21859) series collected at 2057. 4 km W at 2102 another <u>B. v. viridis</u> taken and returned to Gabès at 2110 hrs.
	Drove from Gabès, S. to Tebelbou, Kettana, and Mareth (a distance of 33 kms [$\pm$]) from 2110-2156 under heavy rains and occasional wind. Mareth, 7 km N. at 2206 a DOR <u>Bufo v. viridis</u> was seen but not collected. 8 km N at 2209 on AOR <u>B. v. viridis</u> (21860-21861) was collected.
	Kettana, city limits, at 2223 the final <u>B. v. viridis</u> (21861) was collected AOR and I returned to Gabès at 2245 to end survey. The night was cold and very wet w/ occasional high winds. I suspect the temperature to have been the determining factor in the paucity of <u>Bufo</u> about the evening for it was surely ^{wet} warm enough for them!
12 APR 72	Zarat (26 km E + 24 km S. of Gabès) 1000-1130. Jon Shindler + I collected in beach area to E. of Zarat. Grove of Palms located to SE but mostly the area was typical overgrazed area of scanty, low (15") vegetation and sandy soil.

12 APR 92 which varied in texture from fine to coarse. 2 Palm groves are present and surrounded by drifting sand dunes; I spent most time in area of hummock/low vegetation and the following resulted:

1000 - 1 Acanthodactylus boskianus asper seen low bush;
 1005 - A. b. asper juv. seen in hummock; 1007 - A. b. asper adult seen in hummock; 1014 - A. b. asper (21863-21865) adult shot under Palm; 1102 - A. b. asper (21863-21865) adult dug from hummock in dune area. 1135 - presented a Chamaeleo c. chamaeleo (21866) by Jon who stated that it came from sedge in the Palm Grove to the S. and E.

Oued Zig Zoua, .6 km S. and 10 km E. by unmapped road to Djerba (via, no doubt, a scenic route). From 1210-1257 hrs, I collected in area of a stream passing under road thru a culvert. While walking N., I noticed that the heavy winds and cool temperatures were probably keeping whatever might be active from being so. The area is basically a stone-bottomed stream which meanders little bordered by wheat fields and w/ the presence of sand-hummock in excess of 5' from normal ground level. Heavily shrubbed, these hummock may be good habitat for both Chamaeleo and Acanthodactylus. A Bufo v. viridi (21862) was collected by Dhari Ali from this area.

Oued Zig Zoua, 1305-1400, surveyed hillside to N. of Oued in area of WW II bunker. At 1317 one juvenile Tarentola mauritanica (21867) was collected from under a rock forming the E. reinforcement of the largest (and still free of sand = passage easy) bunker.

12 APR 72

OUOREF, 12 km NW on road to Gabès (= Gabès, 21 km W + 19 km N) in area of ca. 100 M. foothills with several sheep trails and workings for passage of water (both // to and under the highway). From 1615-1700 hr, I turned over rocks and searched the culvert in the vicinity of the Gabès, 29 km mark. Under one rock on the E. side of the stream-bed (now dry) to the E. of the highway and ca. 10 feet N. of the culvert one Chalcidea ocellatus subtypicus (21869) was collected. A Tarentola mauritanica was shot (21868) from the brick facing on the E. edge of the culvert and nothing more was seen in the area. These hills are barren or for as vegetation is concerned -- there are few wildflowers growing and grass (= annual grasses) are present but, from afar, the hills give the appearance of rock alone.

13 APR 72

Drove from Gabès - Matmata - 8 km. W. Matmata on unsurfaced road marked to "Kebili - 105 km". The morning is very windy and even the sun from a clear sky cannot bring the chill from the air. I saw nothing of herpetological interest although I did spend some time in an area 14 km. E. (by road) of Matmata. While turning over rocks, I saw only scorpions and theorize that Eumeces may live in those hills to the S. of the road. The oasis forms the basis for some farmer's wheat field and the stone retaining walls may provide some reptilian shelter. 2 Photor (B&W) were taken from the S. hills in the area -- if only to show the desolation.

14 APR 72

Rhanouch, 7 km N (= Gabès, 4.4 km W + 12.6 km N) from 1135-1300, windy and clear. The purpose of this

14 APR 72 visit was to photograph the area. The Land Rover, although taken across the stream forming my S. boundary, was left for to the S. due to the wet rocks (i.e.: flooded) from the rains of last night and yesterday afternoon. Photo series on B+W roll # 2-72; slides (ca. 4) also taken to use for lecture purposes. In the inter-dunal area, the following:

1207 - Acanthodactylus boschmanii osper (21870-21872) adult shot; 1209 - A. b. osper juv. (21870-21872) collected; 1217 - A. b. osper adult taken; 1214 - Eremia o. olivieri (21873) taken on a knoll [W. end of inter-dune].

and, at 1243, a Chamaeleo l. chamaeleon (21874) juvenile was collected in the sea-side, coastal dune area while walking through high grass (>12") on unstabilized sand.

Rhenouch, beach area (= Gabir, 2.5 km W + 6.0 km N) at 1343 a Eremia o. olivieri (21875) was collected in in dunal area.

⇒ GOUV. DE MEDENINE

Medenine, 6 km. N. by road (= 4 km W + 3 km N) a D.O.R. Malpolon m. insignitus collected at 1545.

Preservation was only of head, tail, and skin. Preparation took, perhaps, more time than the actual specimen was worth but CMFS 21876 was assigned.

Medenine, 28.2 km E and 6.0 km S (= 29 km. SE on road to Ben Sndane) from 1620 - 1715 the following:

1625 - Acanthodactylus p. poudali adult seen;

14 APR 72

1630 - A. p. poudali (21877-21879) adult collected; 1644 -
A. p. poudali juvenile (21877-21879) or young ♀ collected
 on stable dune. Third specimen presented to me by
 Dahir Ali at 1720 but w/ no additional data. Set 180 traps.

15 APR 72

Medenine, 28.2 km E. + 6.0 km S, or approx.
 29 km S.E. on GP1 (Road to Ben Soudane) in area of
 white house and olive grove (to S. of road which travel
 almost due E-W). This is the area of IBP's validation
 site (+) for the Desert Biome Project on Pre-Saharan
 Ecosystems. The area is one of overgrazed steppe
 w/ levees having been added to restrict dune formation
 and soil erosion by wind. The first area I collected
 was N. of the white house and W. of the dirt road
 leading past it. Or -- if you will -- W. of the dirt
 road and N. of the W. portion of the levee. I collected
 by walking through the area immediately N. of the levee
 in an E-W direction. (From the road, I collected up
 to the sand dune / wheat field to the W. end.) My
 interval of travel was $\therefore$ 200 feet W-E and at 6' N-S
 interval until I had moved approx. 200' W. of the
 levee -- a demarcation was present by a plowed field.
 This first area is one of tightly packed ^{small} substrate of
 clay (?) with small stones. Occasional dunes are present
 but these are what I prefer to call hummocks as they
 are stabilized by a mesquite-like plant. From 0907-
 1100 hr, this is how it went: (app = A. p. poudali) (seen = missed,
 in = caught)
 0907 - app. ♂ seen Lycium-like plant; 0910 - app. ♀ in low
 shrub; 0924 - app. ♂ shot in low shrub at entrance to burrow;

15 APR 72

0933 - app ♀ in open area; 0938 - app ♂ shot under bush; 0940 - app ♂ shot in open sand; 0944 - app ♂ under shrub; 0946 - app ♀ seen open sand; 0950 - app ♂♂ (1 caught, 1 missed) in open sand; 0952 - app ♂ in open sand; 0956 - app ♂ seen in shrub; 0958 - app ♀ under shrub; 1000 - app ♂ in open sand; 1004 - Emmias o. olivieri (21903) ^{CMFS} taken under bush; 1006 - app seen in open sand (adult?); 1012 - app ♂ in open sand; 1015 - Adult app seen in tall (18"+) grass; 1019 - app adult seen in low shrub; 1021 - app ♀ in low bush; 1024 - app ♀ in low bush; 1027 - app ♀ in low bush; 1032 - app ♂ seen in low bush; 1036 - app ♂ in low bush; 1040 - app ♀ ^{seen} in low bush; 1044 - app ♀ in plowed area (this was shot up badly and will probably be discarded); 1047 - app ♂ seen in low bush; 1054 - app ♀ seen in low bush; 1100: End for N of levee, W. of road.

1115 - Begin S. of levee, E. of road for approximately same size plot and under same conditions. 1115 - app ♂ seen open sun; 1118 - app ♂ retreated to hole in ground; 1120 - app ♂ retreated to hummock; 1126 - app retreated to beetle hole in hummock; 1136 - app retreated to hole in ground beneath low bush (< 18"). 1145 - END (Heat beginning to become extreme: pretty early in year for these temperatures?)

1315-1330 in Olive Grove to S. of area, 1 app adult seen in wheat field within general area.

1355 - Return to N. of levee, E. of road in Inter-levee area. 1407 - app seen open dune; 1421 - app.

15 APR 72 seen open dune; 1423 - App. ♂ shot open dune; 1437 - App. adult seen dune; [1500 - South of levee, E. of Road] 1504 - App ♀ went down hole; 1506 - App ♀ went down hole; 1508 - App ♂ in shrub; 1510 - App. seen in open; 1521 - ♂ App taken under bush; 1523 - App ♀ taken on hummock; 1535 - App. ♀ on hummock; 1536 - App ♂ under bush; ~~1601~~ 1601 - adult App seen in bush; 1607 - adult App seen in bush (went into hole near plant roots); 1609 - App. ♀ in bush; [1636 - N. of levee, W. of road] 1636 - App. ♂ in bush and 1640 - END.

It should be noted here that no juveniles of A. p. porduli were seen whereas A. l. asper juveniles are common in coastal dune. ♂♂ are larger than ♀♀ or well as being well patterned w/ spots whereas ♀♀ are a light, sandy brown w/ small spots. In the hand, definite sexing can be done using femoral pores (i.e.: See Bons + Sirois, 1957) and basal - tail width. Biomass Data are as follows [CMFS 21878-21879 are from 14 APR, 21881-21888, 21890-902 are from 15 APR 72]:

CMFS NUMBER	SEX	GRAM WEIGHT	S-U (MM) LENGTH	TAIL (MM) LENGTH	TOTAL (MM) LENGTH	NOTES OF IMPORTANCE
21878	♀	3.5	51	86.5	137.5	Immature (tail [ventral] orange)
21879	♂	5.5	60	112	172	
21881	♂	6.5	63.5	115	179	
21882	♂	5.0	57	100	157	
21883	♂	6.5	62	75	137	Regenerated Tail
21884	♂	6.5	60	53	113	Regenerated Tail
21885	♂	6.5	62.5	115.5	178	
21886	♂	7.0	63.5	116	179.5	Shot with .22 dust

	#	SEX	WT.	S-U	Tail	TL	NOTES
15 APR 72	21887	♂	7.0	63	99	162	Regenerated Tail: Shot w/.22
	21888	♂	7.0	63	112	175	Shot w/.22 dust
	21890	♀	7.0	66	111	177	
	21891	♀	5.5	59	81	140	Regenerated tail (?)
	21892	♀	4.5	55.5	72	127.5	Regenerated tail (?)
	21893	♀	5.0	56.5	92.5	149	Tail broken (but complete) ^(NOT SEPARATED)
	21894	♀	4.0	56.5	92	148.5	
	21895	♀	4.5	55.5	95	150.5	
	21896	♀	4.5	55	95	150	Shot w/.22 dust
	21897	♀	4.0	53.5	72.5	126	Broken Tail
	21898	♀	3.5	53	92	145	Shot / immature (?)
	21899	♀	3.5	53	18	71	Tail incomplete: shot and in bad condition
	21900	♀	3.5	55	77	132	
	21901	♂	6.0	62	22	84	Broken Tail
	21902	♀	3.0	51.5	76.5	128	

and the activity (on the surface) appear to be Bi-modal as that with A. e. erythrum has proved to be. One should endeavor to get black-body temperature / body temperature on this species as soon as physically possible. A nice comparative study (either between A. b. ogeri and A. p. pondalis or w/ A. e. erythrum) is available for the taking right here in the Gabès - Medenine area!! ≡ GOUV. DE GABÈS ≡

16 APR 72 Gabès - Methouia - Oudref - 12 km. NW Oudref
driven and surveyed from 1330 - 1715.
Gabès, 21 km W. & 19 km N (= Oudref, 12 km NW by road to Gafsa) in area of low (ca. 100M) hills with much talus, many culverts, and little vegetation of consequence. At 1406, a juvenile Tarentola mauritanica

16 APR 72

(21910-21915) was collected under a rock ca. the E. edge of a culvert. 1413 - T. mauritanica (21910-21915) adult taken from culvert. 1420 - Chalcidea o. subtypicus (21908-21909) found under large, flat, piece of conglomerate in area of drainage from culvert (on W. side of road). 1437 - T. mauritanica adult collected under rock outcropping in area of stream bed. Followed culvert-channelled stream bed to L intersection w/ what appear to be a much larger temporary body of moving water. Turned in direction of upstream (= uphill). 1450 - 2 Bufo v. viridis seen in small (6' x 3') shallow (< 6') pool in amphiplex. The pool is sheltered on the N. by Juncus in heavy concentration, on S. by conglomerate formation > 10' high, on the W. by a series of large rocks and is shallow and, obviously, fed on the E. by runoff. By 1513, I had arrived at the highway again and another T. mauritanica was collected from a culvert. There
 ⇒ appear to be, on the average, 2 T. mauritanica / culvert here or opposed to Spain normally 3 or better. Perhaps the species is a communal ^{nesting} ~~nesting~~ but in S. Spain only! 1522 - T. mauritanica taken from inside culvert at about midway between E & W edge. 1527 - T. mauritanica adult taken from culvert. At 1530 - moved approximately 1 km. closer to Oudref (SE) and noted a lizard (Eremias?) on base of a retaining wall. 1534 - 2 T. mauritanica seen on culvert in sun, 1 subadult, 1 adult. At 1558 the second (and smallest of 2) Chalcidea o. subtypicus (21908-909) collected under conglomerate approx. 50 yds W. of highway.

16 APR 72	At 1608, the first of a series of 4 <u>Tropocoris t. algericus</u> (Zekkoniche) (CMFS 21904-21907) collected from beneath a small "chunk" of conglomerate on a talus slope. The slope faces W and S and the habitat under the rock was moist dirt w/ small stones and straw-like dried grass. The additional specimens were taken at 1617, 1618, and 1629. (all, incidentally, from an area about 50' x 100' square) 1648 - departed and returned to Gabir. Oued el Fard, 10.7 km E + 15 km S of Gabir, from 2100 - 2130 under partially cloudy skies and w/ cold temps. A series of 15 <u>Rana esculenta</u> (CMFS 21916 - 21930) was collected from the small meander-formed, pond to the S. and W. of the main road/stream. On the E. side, in the clear pool of $\pm$ 6' of water and algae formations I saw a large (ca. 2'), whitish-grey eel-like animal w/ external gills, a flattened nose and w/ dorsally located eyes. There are 2 in this pool, one of which is smaller and I would, very much, like to have both for Carnegie's collection if a net can be obtained. Incidentally, the water level in the pond is still dropping but the much soil still covers me almost above ankles when the pond is walked across. The algae/pond weed provide no support.
17 APR 72	NOTE: Drove to Medenine and return w/ no noted, significant occurrences.
18 APR 72	NOTE: ibid: trip line of 249 traps yielded 2 <u>Basiliscus</u> sp. and 2 birds (<u>Oenothera</u> sp. + a ^{<u>Colaptes</u>} <u>sp.</u>). Overcast + cold all day: occasional sun and rain.

19 APR 72	Cold + Rainy: packed specimens for shipment
20 APR 72	Gaber, 4.4 km W. + 12.6 km N. (= 7 km N. Rhinnauch), 1045-1244. 1102: leeward dune area a <u>Cremias o. olivieri</u> (21932) collected in low shrubbery 1109 - skin of <u>Malpagon</u> (?) [slender, < 1 m, dorsal present, head oblong but median furrow not distinct, appressed patternless, scales smooth] found in leeward dune/dry lake area. 1150: 1 ♂ <u>Naja h. haje</u> shot in inter-dunal area thicket (CMFS 21931). 1220: <u>Cremias</u> <u>o. olivieri</u> seen in <u>funaria</u> in leeward dune/dry lake. Gaber, 9 km W + 5 km S at Oued el Beida, 1630-1800. 1645: <u>Cumecus schneideri meridionalis</u> (21934) found under a large rock in a grove of trees (producing a fruit somewhat like a kumquat). Resting on the soft moist soil at the base of a stone retaining wall, this lizard was the only of its genus to have been seen after extensive stone turning. 1730: <u>Cremias</u> <u>g. guttulata</u> (21933) collected on W.-exposed slope of the hill in the same area. The specimen was running when collected. Our preparator (Dahir Ali) says that "Thub" (pro- nounced borrowing the TH from "although" and the UB from "Tub") are also found on the slopes and, from his description of the animal plus habitat considerations, "Thub" could very well be <u>Uromastix</u> . I shall try to find one or more with the advent of better weather.
21 APR 72	ibid, 0830-0930, searched rocks and picked up trapline. 2 specimens of "Elephant Mouse" collected, probably Insectivore but with a complete orbit, 34 teeth ($\frac{0-1-4-3}{1-1-4-3}$), a long cartilaginous nose, and I have photographed the specimen which was better preserved when we returned. The ♂♂ appear

21 APR 72

to have a scent gland on the ventral aspect of the tail. We shall try, also, to obtain a series of these.

Matmata - Toujane. 10 km, by road, SE from

Matmata in a permanent pond bordering the dirt road

From 1130-1200, I listened to the "shrill trill" of Rana esculenta while eating lunch but saw nothing of interest in the truck.

Tebellou, 4 km E + 2 km S. Gabès, at 2115 hr.

yielded a Bufo u. viridis AOR (21935).

Oued el Ferd, 10.7 km E. + 15 km S Gabès, from

2130-2200 yielded a Masticophis capensis leprosa (21936) and

a Natrix maura (21937) from the large spring forming the E.

The "salamanders" were not seen.

22 APR 72

Oudref, 12 km NW (= 21 km W. + 19 km N. Gabès)

in what can only be called an ansys with walls reaching a total elevation of ± 100 M, I collected from 1230-1410.

While lifting stones along (= conglomerate) the bed and on the E. hillside, I collected, at 1300, 1 Chalcidea o. subtypicus

(21945-21946) which was active in shrubbery (tail broken while trying to inject it). At 1314 a smaller C. o. subtypicus

was collected under conglomerate. At 1320, the first Tropiscolotes tripolitanus algericus was collected under a

rock at base of fungus stand. At 1324, 1334, 1342,

and 1353 the additional specimens were taken forming CMFS series 21939-21943. This species appears to be

fairly common in this area and lives in dry-moist soil under conglomerate on talus slopes and in retaining walls.

At 1333 a large (??) Emmias g. gutturalata (21944)

22 APR 72 collected under a rock at the top of the slope. At 1335, a C. o. subtypicus seen in pile of rock. At 1351 another C. o. subtypicus seen in rock forming a stone retaining wall. At 1407 a small Tarentola mauritanica (21938) taken, while sunning, in a culvert.

23 APR 72 Gaber, 4.4 km W. + 12.6 km N. (= 7 km. N. Khannouch), from 1000-1200, overcast and w/ a heavy E. wind. Seaward/dry lake area - 1017: Premia o. olivieri seen in low bush 1019: Acontodactylus b. asper (21947-21948) adult ♂ collected in low bush [$T_B = 43.5^\circ\text{C}$] 1035: A. b. asper seen in open sand. Inter-dunal area: 1050: 2 Naja h. haje (presumed, from size + proximity, to be ♂ + ♀) seen in bush of NITRARIA RETUSA ^(gypso-saline) _(hardpan of ground - water origin) (Georges Novikoff: DET) on a thicket-covered hummock in same location as the 2 others were initially seen and eventually, at least w/ one, captured. $\Rightarrow$ COULD NATA be a COMMUNAL NESTER? If not, what is the Naja attraction at this particular mound? 1150: A. b. asper ♂ (21947-21948) collected in open sand [$T_B = 43.5^\circ\text{C}$].

— Thermometer used for T_B in TERUMO (Japan) TN-III Normalglass Max. $1/10^\circ\text{C}$ which is graduated from $35-42^\circ\text{C}$ —

23 APR 72 Gaber, 10.7 km E. + 15 km S. at Oued el Ferl, 2100-2200, 11 Rana esculenta (21951-21961) collected from pond (now really in danger of drying: H_2O waist high in center but margins have receded $\pm 12"$) to W. of highway 2 Mauremys caspica leprosa (21949-21950) taken, 1 from W. pond and one from SW margin of pond to E. a Night Heron was shot W. of road and the "salamanders" were not seen.

25 APR 72

Saber, 4.4 km W. & 12.6 km N., Inter-dunal area
from 0945-1110. The following:

0952 - Acanthodactylus l. asper (21962-21965) adult ♂
shot in open sand $T_B = 35^\circ\text{C}$.

1004 - A. l. asper adult ♂ shot in open sand $T_B = 35^\circ\text{C}$.

1022 - A. l. asper adult ♀ shot in thicket $T_B \approx 35^\circ\text{C}$.

1025 - A. l. asper immature sunning in open sand. $T_B = 35.75^\circ\text{C}$.

1027 - A. l. asper immature in tall grass. $T_B = 35^\circ\text{C}$.

1038 - A. l. asper adult ♀ shot open sand $T_B = 37.2^\circ\text{C}$.

1108 - A. l. asper immature taken in leeward dunes/dry
lake area. $T_B \approx 34.8^\circ\text{C}$ ($\approx 35^\circ\text{C}$).

#	SEX	GRAM WT	MM S-U	MM TAIL	MM TOTAL	NOTES
21962	♂	13	72	165	237	Shot w/ .22 dust
21963	♂	10	73	154	227 227	Shot "
21964	♀	9.5	71	137	208	Shot "
21965	YOUNG ♀	7.0	69	80±	149	Broken tail; Shot "
21966	imm	3.5	53	112	165	Tail broken after measurement
21967	imm	3.0	47.5	100	148	
21968	imm	5.0	58.5	96	154	Regenerated tail; Tail broken after measurement

26 APR 72

Saber, 4.4 km W. & 12.6 km N.; Overcast & cool/inter-
mittent sun and slight breeze.

0850 - 1 Gerrhilla sp. from Interdunal area.

Seaward
dry/dry
lake 0920 - 1 A. l. asper juv. seen in thicket.

0924 - Eremia o. olivieri (21978-9) caught while
moving thru high grass.

0930 - A. l. asper adult ♂ in open sand $T_B = 35^\circ\text{C}$.

INTER-
DUNAL
AREA 0945 - A. l. asper seen under thicket (juv.)

0952 - A. l. asper adult ♂ w/ regenerated tail shot

26 APR 72 on mound. $T_B = 37.7^\circ\text{C}$ (21969-21977)

1003 - juv. A. b. asper seen in thicket.

1008 - juv. A. b. asper seen in open sand.

COASTAL
DUNES

1012 - juv. A. b. asper seen in open sand.

1013 - juv. A. b. asper seen in open sand.

1020 - juv. A. b. asper seen in open sand.

1024 - juv. A. b. asper seen in open sand.

1025 - juv. A. b. asper seen in open sand.

⇒ A. b. asper must have >1 breeding cycle/year.

The population here is mixed w/ yearlings, new (i.e. recent) juveniles, and adults. Much unlike pardalis data to date but similar to Spain w/ exception of obvious newborn this early in the year!

INTER-
DUNES

1032 - A. b. asper juv. seen on N. margin of area.

LEEWARD
DUNES/DRY
LAKE

1108 - A. b. asper adult ♂ shot in thicket $T_B = 36.4^\circ\text{C}$.

1111 - A. b. asper adult ♀ w/ rubber band in thicket but w/ exposure to direct sun. $T_B = 39.2^\circ\text{C}$.

1127 - A. b. asper juvenile in sand (open) $T_B = 36.2^\circ\text{C}$.

1130 - A. b. asper adult ♂ shot in sun $T_B = 37.4^\circ\text{C}$.

1137 - Testudo g. graeca (21980) in tall (>18") grass at N. margin. $T_B = 36.15^\circ\text{C}$.

1144 - A. b. asper juvenile seen on hummock.

1147 - A. b. asper juv. seen near pond.

1150 - Natrix maura (21981-21982) juv. captured while it was lying on pond bottom (shallow [43"] water).

1152 - N. maura (ibid) juv. in same pond.

1203 - A. b. asper juvenile in open sand $T_B = 36.4^\circ\text{C}$.

1207 - 2 A. b. asper immatures seen in grass.

28 APR 72 1400, Chalcides o. subtypicus (21994-21995) collected from under rock from E. section of road in stream bed. Over the top of the immediate hill to E. is a pasture which has a rock border from which all specimens were taken w/ exception of the Psammochromis which were from the wall of the stream bed proper. 1425-1430 hr, 2 Tarentola mauritanica seen on rocks facing dry stream bed and at 1435 2 T. mauritanica (21989-21993) were taken from culvert. 1454 - 2 T. mauritanica (21989-21993) taken from culvert and at 1508 the first Tropiocolotes t. algericus (21996-21997) was taken. 1521 hr, a T. t. algericus taken from under a rock and at 1553 another C. o. subtypicus from under a rock. At 1607 a Psammochromis ~~at~~ algericus was collected from open grass area near dry stream bed. At 1610 another P. algericus (21998-21999) taken in the ravine. Departed 1630.

29 APR 72 Drove from Gabès to Kébili (74 minutes, 114 km by odometer) and onto the Chott Djerid for 58 kms but had to turn around due to road conditions (water on road and salt not firm enough to support the car). Area photographed but deemed not worthy of collection. Drove back to Kébili and took the road about 5 km N of Kébili (off to N. of Gabès highway) which crosses the Chott el Fedjadj and intersects with the Gabès-Djéza main road. Nothing of herpetological interest was seen although the rocks look as if they might be of some value for lizard-snake habitat. Some vegetation in the hills but beautiful scenery (see slides). Arrived at Tozeur about 1700 and stayed at the Hotel

29 APR 72 de l'Oasis (3,600 Dinars /night/single) From 1930 - 2145, I drove the road from TOZEUR to NEFTA (≈ 24 km) and returned in search of reptile life. Specimens # CMFS 22000 and 22865-22876 were collected along this road. Data: TOZEUR-NEFTA ROAD, GOUV. DE TOZEUR, STENODACTYLUS PETRIEI ANDERSON. Exact localities on the series are:

TOZEUR, 5, 8, 9, 10, + 11 km (by road) WSW
NEFTA, 6 + 8 km ENE

but specimen differentiation is impossible.

30 APR 72 TOZEUR, GOUV. DE TOZEUR, 19 km N. on GP 3 (main road to Gafsa) 0940-1020 searched ruins of stone building and area under RR bridge. Although moisture present under rocks in both areas, no specimens were taken. Note that very few invertebrates were seen in this area also! 18 km N. in an area where a stream bed and culvert pass under the road. In here, there are fungus and some hummocks of mesquite-like plants. The Crematogaster olivieri (22877) was the only specimen taken under overcast skies (sun, when visible, hot) in this area of saline (taste) water and moist stream bank. 12 km N from 1115-1140 I searched the S. part of the road in the area of Tamarix where only sheep tracks were in evidence. 9 km N. at the Oasis of El Homma (2 km E + 10 km N of TOZEUR) I collected from 1200-1400 in an area of Palms and many deep irrigation ditches. The soil was, except deep in ditches, dry and the water was stagnant in many places. Through the assistance of several

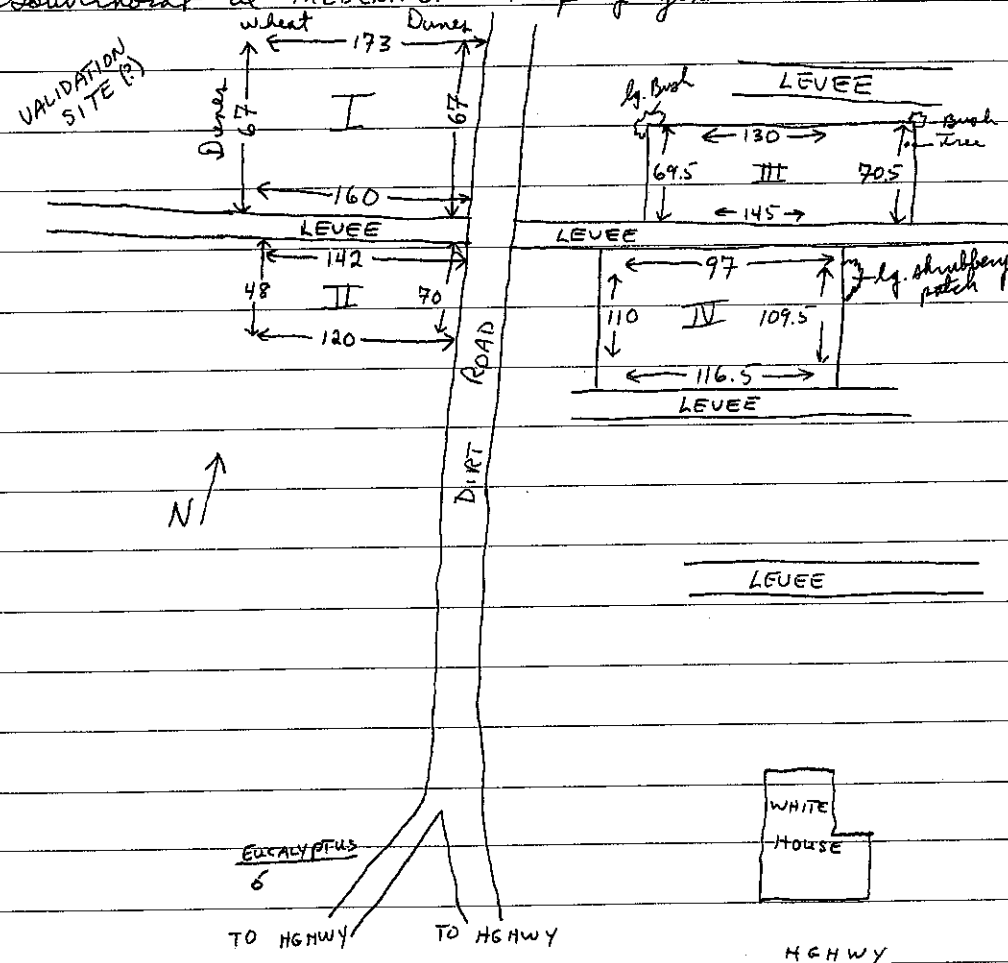
30 APR 72	local children, I was able to collect <u>Acanthodactylus</u> b. <u>roper</u> (22878-22887), <u>Chalcider</u> o. <u>subtypicus</u> (22888), <u>Natrix</u> <u>maura</u> (22889-22890), and <u>Bana</u> <u>esculenta</u> (22891-22912) from this locality. Later that evening (2130-2415) I collected in the area of the TOZEUR-NEFTA highway again. <u>Stenodactylus</u> <u>petriei</u> (CMFS 22915-22935) were collected as follows: TOZEUR, 2, 7, 11, 7, 6 km WSW NEFTA, 12, 11, 3, 1, 3, 10 km ENE NEFTA, 3, 4, 5, 7, 6, and 4 km WSW on road to Algeria. A <u>Bufo</u> <u>mauritanicus</u> (?) (CMFS 22913) was collected 3 km WSW at 2248 in sand-covered road area w/ irrigation pipe running // on S. side. Nefta, 7 km ENE, at 2351 an adult ♂ <u>Ceraster</u> <u>viperina</u> (CMFS 22914) collected 40R on paved highway. Habitat photo taken (B+W, II-72)
1 MAY 72	Visited "Zoo du Desert" of Sitijoni in Tozeur. Many <u>Malpelon</u> <u>monspessulorum</u>, 4 <u>Ceraster</u> <u>ceraster</u> (photographed), 6 <u>Uromastix</u>, and many <u>Scincus</u> on display. I purchased 2 <u>Scincus</u> <u>scincus</u> <u>laterimaculatus</u> for the equivalent of \$1.00. They wanted \$4/each for the <u>Ceraster</u> so I just photographed the best of their 4. Gabis, 21 km W + 19 km N, at 1446, another <u>Tarentola</u> <u>mauritanica</u> collected from a culvert (22938). Rental car \$140.00 for 4 days and ± 1200 km.
NOTE ⇒	The <u>Stenodactylus</u> which were collected on 29 APR 72 were killed by injection of 10% formalyn into the body cavity at 2300 hrs.

on 29 APR 72. At 1500 on 30 APR, I was able to get a definite "retraction" response by touching the tail tip on 10 (at least) of the specimens. Just how long does this reflex last in a dead *Stenodactylus*? The specimens were prepared by body injection and then positioned in an enamel pan cushioned by toilet tissue. Bodies were then covered with tissue and 10% formalyn was liberally "squirled" over the covering tissue so as to keep the specimens damp during the time required for proper setting. A curious happening, indeed!

BIOMASS FIGURES/DATA ON *A. P. PARDALIS*

11 MAY 72

Validation site located ca. 28.2 km E. + 6.0 km S. MEDENINE in Gouvernorat de MEDENINE. Map of general area below:



11 MAY 72

Distances are measured in steps, each side paced 3X and average taken (in all instances for I + II, deviation ± 4 steps on a side). Perimeters are obvious ones: the levee & the road form natural boundaries, on Area I the NW corner is marked by a large hole and the NE corner by the S. edge of a plowed strip of land. On Area II the NW corner is a large, single plant which lines up w/ a Eucalyptus tree along the highway and the SE corner is the 2nd such plant along the dirt road S. of the levee. Areas III + IV are yet to be delineated.

10 steps = 620 cm (as determined in villa by 3X $\bar{x}$ of pacing on asphalt tile) All distances are measured in single steps!

It was decided that the best method for an accurate Biomass estimate was a destructive/non-replacement survey of each of four areas. Specimens were collected over a 3 day period of intensive collection with elastic bands. The bands reduce physical damage to the animals and leave specimens in good condition for weights & measures along with reducing evaporative water loss while in the field. After collection, the specimens are removed to the white house and placed in the larger chamber where the temperature is ca. 26.6°C in mid-afternoon.

Block-Body temperatures are taken with an unlabelled (as to mfg.) glass, alcohol-filled (?), thermometer graduated from -10 to 154°C which has had the bulb wrapped in black electrical tape. Body temperature thermometer is described on p. 45 of this volume and is lubricated w/ glycerine before insertion thru cloacal opening into body cavity. Deep-Body

11 MAY 72

temperatures should result from this method. Care is taken not to exert any influence on thermometer readings from my hand or sunlight. The data from today are as follows:

0800 - Start AREA I

0830 - Appodalis seen in bush - not on site

0838 - Appodalis ♂, $T_B = 35.6^\circ$ 35.35°C , taken while sunning.

0923 - A. p. pardalis ♂ ~~not / AREA II~~, $T_B = 41.7^\circ\text{C}$ 41.7°C , from open shade of Rhantarium.

0938 - A. p. pardalis ♂, $T_B = 34.8^\circ\text{C}$ ($= 435^\circ\text{C}$), from beneath Rhantarium

1012 - Appodalis ♂, $T_B = 435^\circ\text{C}$;

1015 - A. p. pardalis ♀ adult seen.

1024 - A. p. pardalis ♀ adult seen.

1030 - A. p. pardalis ♀, $T_B = 435^\circ\text{C}$, in Rhantarium

1035 - A. p. pardalis adult ♀ seen in Rhantarium

1045 - A. p. pardalis ♂ from N. of levee, E. of road in unpoached area, $T_B 435^\circ\text{C}$.

1056 - A. p. pardalis ♀, $T_B 435^\circ\text{C}$, from Rhantarium

1058 - A. p. pardalis adult ♂ seen in Rhantarium

1100 - A. p. pardalis ♀, $T_B = 36.1^\circ$ 35.9°C , in Rhantarium

1106 - A. p. pardalis ♀, $T_B = 36.8^\circ$ 36.8°C , in low shrub.

1114 - A. p. pardalis ♂, $T_B = 37.2^\circ$ 37.2°C , in open sand

1120 - A. p. pardalis adult seen in open sand

1125 - A. p. pardalis ♀, $T_B = 37.4^\circ$ 37.4°C , in open sun.

1200 - END.

1500 - Begin AREA I again.

1514 - A. p. pardalis ♀, $T_B = 37.1^\circ$ 35.55°C , in Rhantarium

11 MAY 72

1518 - A. p. pardalin ♂, $T_B = 35.5^\circ\text{C}$, in Rhontarium1524 - A. p. pardalin ♀ adult seen.1547 - A. p. pardalin ♀, $T_B = 35.7^\circ\text{C}$, in Rhontarium1612 - A. p. pardalin adult ♀ seen in bush.

1700 - END for 11 MAY 72

Block-Body Temperature for 11 MAY 72 ($^\circ\text{C}$)

TIME	OPEN SHADE	SUN	WEATHER
0600	22.0 23.8	26.0 27.4	Clear, Slight Breeze
0830	24.0 25.6	29.0 30.2	Clear, Slight Breeze
0900	24.0 25.6	30.0 31.2	Clear, Slight Breeze
0930	26.0 27.4	31.5 32.6	Clear, Slight Breeze
1000	29.0 30.3	36.0 37.0	Clear, Slight Breeze
1045	32.0 33.2	39.0 40.0	Clear, Slight Breeze
1100	33.5 34.6	38.0 39.0	Clear, Breeze
1130	35.0 36	40.0 40.8	Clear, Breeze
1200 N	35.5 36.4	39.0 40.0	Overcast, Sun
1500	30.0 31.2	37.0 38.0	Clear, Breeze
1530	35.5 29.8	37.5 38.4	Clear, Breeze
1600	28 29.3	35.5 36.4	Clear, Slight Breeze
1630	26 27.4	37.0 38	Clear, Breeze
1700	26 27.4	34.0 32.2	Clear, Breeze

13

CMFS NUMBER	SEX	GRAM WT	MM S-U	MM TAIL	MM TOTAL	NOTES
AREA I						
22940	♂	820	66.5	102	168	Broken Tail
22941	♂	7 191	67	23	90	Partial Regenerated Tail
22942	♂	92.08	67	93	161	Regenerated Tail
22943	♂	5 191	59	31	90	Partial Regenerated Tail

3
N

11 MAY 72	22944	♀	^{1.71} 5	57	95	152	Broken Tail
	22945	♀	^{1.76} 5.5	60	92	152	
	22946	♀	^{1.82} 6	59.5	82	142.5	
	22947	♀	^{1.65} 4.5	58	90	148	
	22948	♀	^{1.59} 4.0	56	88	144	
	22949	♀	^{1.65} 4.5	60	16	76	Broken Tail
	22950	♀	^{1.82} 6	61.5	100	161.5	Preserved Alive

AREA II

22951	♂	^{1.76} 5.5	60	42	102	Partial Regenerated Tail
22952	♂	^{1.82} 6.0	62	37	99	Partial Regenerated Tail

UNDESIGNATED AREA

22953	♂	^{2.00} 8.0	65	76	142	Regenerated Tail Tip
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CMFS 22940 - 22953 = ACANTHODACTYLUS p. PARDALIS

12 MAY 72 0755 - a. p. pardalis adult ♂ seen S. of Area II.
 0910 - AREA I - a. p. pardalis ♀, $T_B = 43.5^\circ\text{C}$, while
 sunning near tall grasses ($\approx 36''$).

NOTE → ♂♂ escape by running from bush to bush, ♀♀ retreat to
 one plant and run around its base

0930 - BEGIN AREA II.

0937 - a. p. pardalis ♂, $T_B = 35^\circ\text{C}$, in Rhantarium

0940 - Cremis p. olivieri, in molt, collected in
Rhantarium T_B not available (therms. too large).

0945 - adult a. p. pardalis ♂ + ♀ seen in open sand.0952 - a. p. pardalis ♂, $T_B = 43.5^\circ\text{C}$, in open sand.

1009 - a. p. pardalis ♀ adult seen, escaped into beetle
 (Tenebrionidae) hole at base of dead plant

1013 - a. p. pardalis ♀, $T_B = 35^\circ\text{C}$, in open sand

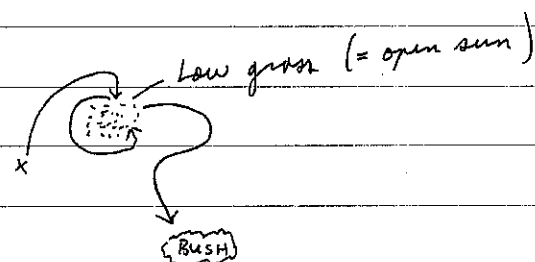
12 MAY 72

1028 - A. p. pardali ♀, $T_B = 43.5^\circ\text{C}$, in RhantenniumA. p. pardali ♂ adult seen, mated pair (?)1031 - A. p. pardali adult ♂ seen in open sand1039 - A. p. pardali ♂, $T_B = 37.9^\circ\text{C}$, in open sand1116 - A. p. pardali ♀, $T_B = 43.5^\circ\text{C}$, in RhantenniumA. p. pardali adult ♂ seen1122 - A. p. pardali ♀ adult seen in Rhantennium1130 - Stenodactylus petrii collected in open sand

1133 - MOVE TO AREA I

1144 - A. p. pardali adult ♀ seen in low shrub

Path of escape:



Interval between changes of direction ± 2 seconds, entire maneuver took less than 10 seconds, movement to escape heat??

1200 - MOVE TO AREA II

1203 - A. p. pardali ♂, $T_B = 35.5^\circ\text{C}$, in Rhantennium1208 - Adult A. p. pardali (♂?) seen in open sand1220 - A. p. pardali ♀, $T_B = 43.5^\circ\text{C}$, seen in Rhantennium

→ and ran to 3 bushes before stopping.

1300 - END AREA II

1458 - A. p. pardali adult ♀ seen. S. of Area II1501 - A. p. pardali ♀, $T_B = 36.6^\circ\text{C}$, S. of Area II

in open sand

1517 - Area II - A. p. pardali ♂, $T_B = 36.1^\circ\text{C}$, in Rhantennium

12 MAY 72

1530 - MOVE TO AREA I

1547 - A. p. pardalis ♀, $T_B = 36.0^\circ\text{C}$, in open sand

1600 - RETURN TO AREA II

1602 - A. p. pardalis ♂, $T_B = 36.5^\circ\text{C}$, in open sand1604 - A. p. pardalis adult seen in open sand.1611 - A. p. pardalis ♀, $T_B = 43.8^\circ\text{C}$, in Rhyntherium1634 - A. p. pardalis adult ♀ seen in tall grass1648 - A. p. pardalis adult ♀ seen in tall grass

1700 - END 12 MAY 72

Black-Body Readings for 12 MAY 72 ($^\circ\text{C}$)

TIME	OPEN SHADE	SUN	WEATHER
0900	23.0 24.6	34.0 35	Clear, wind
0930	22.0 23.8	35.5 36.4	Clear, wind
1000	23.0 24.6	39.0 40.0	Clear, wind
1033	24.0 25.6	37.5 38.4	Clear, wind
1100	27.0 28.4	41.0 42	Clear, wind
1132	29.0 30.3	42.0 43	Clear, wind
1200	27.5 28.8	44.0 49.8	Clear, wind
1230	29.0 30.3	48.0 48.8	Clear, wind
1300	31.0 32.2	51.0 51.8	Clear, wind
1500	? 30.0 ? 35.0	41.0 42	Clear, wind
1530	27.0 28.4	44.0 44.8	Clear, wind
1600	30.0 31.2	47.0 47.8	Clear, wind
1630	29.0 30.3	41.0 42.0	Clear, wind
1700	29.0 30.3	37.0 38.0	Clear, wind

12 MAY 72	CMFS NUMBER	SEX	GRAM WT	MM S-V	MM TAIL	MM TL	NOTES
	AREA II						
	22954	♂	^{1.91} 7	64	96	160	Regenerated Tail Tip
	22955	♂	^{1.87} 6.5	62	89.5	151.5	Complete Regenerated Tail
	22956	♂	^{1.91} 7	61.5	116	177	
	22957	♂	^{1.91} 7	67	55	122	Partial Regenerated Tail
	22958	♂	^{2.00} 8	66	126	192	Preserved alive
	22959	♂	^{1.91} 7	64.5	91.5	156	^{Preserved alive} Complete Regenerated Tail
	22960	♀	^{1.65} 4.5	55	80	135	
	22961	♀	^{1.52} 3.5	53	59	112	Complete Regenerated Tail
	22962	♀	^{1.65} 4.5	54	84.5	138.5	
	22963	♀	^{1.59} 4.0	54	92	146	
	22964	♀	^{1.71} 5.0	56.5	89	146	Preserved alive
	AREA I						
	22965	♀	^{1.82} 6	60	79	139	
	22966	♀	^{1.82} 6	59	90	149	
	S. OF AREA II						
	22967	♀	^{1.76} 5.5	61.5	104	165.5	
	- NOT A. P. PARDALIS - AREA II						
	22968	♂	^{1.14} 1.5	39	92.5	132	
	22969	juv.	^{1.14} 1.5	40	23.5	63.5	Preserved alive
	CMFS 22954-22967 = <u>ACANTHODACTYLUS</u> p. <u>PARDALIS</u>						
	22968 = <u>EREMIAS</u> o. <u>OLIVIERI</u>						
	22969 = <u>STENODACTYLUS</u> <u>PETRIEI</u>						
13 MAY 72	Today will be ± for final "cleanup" and notation of remaining specimens on Areas I+II. 0647 - One <u>Sphenops baulengerii</u> taken from loose sand of stabilized dune in Area I. 2 <u>Serphillus</u> (?) sp. collected in dunal area of Area I.						

13 MAY 72

0900 - Start Survey Area II

0902 - A. p. pondalin ♂ adult seen on E. periphery of Area I.0911 - A. p. pondalin ♀, $T_B = 35.8^\circ\text{C}$, open sand0927 - A. p. pondalin ♀, $T_B = 43.5^\circ\text{C}$, open sand

0935 - MOVE TO AREA I

0942 - A. p. pondalin ♀, $T_B = 43.5^\circ\text{C}$, open sand0956 - A. p. pondalin ♀, $T_B = 43.5^\circ\text{C}$, open sand

1005 - RETURN TO AREA II

1007 - A. p. pondalin adult ♂ seen on NW corner (non-resident [?], should average in $\frac{1}{2}$ wt of adult ♂ $\bar{x}$?)1013 - Adult A. p. pondalin ♀ seen in low shrubbery (43.6°).1017 - A. p. pondalin ♀, $T_B = 43.5^\circ\text{C}$, in shrub ($\approx 36^\circ$), and chest cavity damaged by rubber band.1030 - A. p. pondalin adult ♀ seen on NE corner. (resident?)1043 - Adult A. p. pondalin ♀, $T_B = 36.3^\circ\text{C}$, open sand.1052 - Adult A. p. pondalin ♂ seen on NW corner again.

1100 - END.

1300 - Begin survey (activity purposes only) on non-collected area to S. of area II.

1320 - A. p. pondalin ♂, $T_B = 37.2^\circ\text{C}$, in Rhynchospora.

1400 - END.

1600 - Begin Area II final survey.

1600 - A. p. pondalin ♀, $T_B = 37.4^\circ\text{C}$, in tall grass NE corner (see 1030 entry!)

1630 - Begin AREA I final survey.

1700 - END w/ nothing seen.

13 MAY 72	Black-Body Readings for 13MAY72 (°C)			
	TIME	OPEN SHADE	SUN	WEATHER
	0900	23° 24.6	37° 38	Clear, wind
	0930	24.5° 26	36.5° 37.5	Clear, wind
	1000	27° 28.4	41° 42	Clear, wind
	1030	29° 30.3	42.5° 43.2	Clear, wind
	1100	28° 29.3	46° 46.8	Clear, wind
	1300	35° 36	46° 46.8	Clear, wind
	1330	32° 33.2	44.5° 45.4	Clear, wind
	1400	38° 39.0	47° 47.8	Clear, Breeze
	1600	34° 35	42° 43	Clear, Breeze
	1630	32° 33.2	44° 44.8	Clear, wind
	1700	31° 32.2	39° 40.0	Clear, wind

CMFS NUMBER	SEX	GRAM WT	MM S-V	MM TAIL	MM TL	NOTES
AREA II ³ _N						
22972	♀	^{1.87} 6.5	64.5	102	166.5	
22973	♀	^{1.82} 6.0	58.5	94.5	153	
22974	♀	^{1.59} 4.0	50	69	119	Regenerated Tail Tip; Damaged chest
22975	♀	^{1.65} 4.5	57	95	152	Preserved alive
22976	♀	^{1.59} 4.0	53	77	129	Broken/complete Tail; Pres. alive
AREA I						
22977	♀	^{1.71} 5.0	56.5	97.5	154	
22978	♀	^{1.71} 5.0	54	73	127	
S. OF AREA II						
22979	♂	^{1.87} 6.5	6.0	119	179	
AREA I - NOT A. P. PARDALIS -						
22980	?	^{2.15} 10	99	78	177	Preserved alive

X

13 MAY 72	CMFS 22972-22979 = <u>ACANTHODACTYLUS</u> <u>P. PARDALIS</u> 22980 = <u>SPHENOPS</u> <u>BOULENGERI</u>
15 MAY 72	Gabier, Sout. de Gabier, 4.4 km W & 12.6 km N (at Rhennouch) from 0745 to 1130 Overcast and very windy 0900 - <u>Acanthodactylus</u> <u>boschmai</u> <u>asper</u> (22986-22988) subadult ♂, $T_B = 43.5^\circ\text{C}$, in dunes with <u>NITRARIA</u> <u>RETUSA</u> (see p. 45) in leeward dune/dry lake area. 0919 - <u>A. b. asper</u> juvenile seen in beach dunes (= COASTAL DUNES) 0928 - <u>Varanus</u> <u>g. griseus</u> (22989-22990), $T_B = 43.5^\circ\text{C}$, while sunning in open sand in leeward dune/dry lake area. 0930 - <u>Varanus</u> <u>g. griseus</u> (22989-22990), $T_B = 43.5^\circ\text{C}$, extracted from hole in stabilized dune of leeward dune/dry lake area. 0935 - <u>A. b. asper</u> juvenile (22986-22988), $T_B = 34.8^\circ\text{C}$ (43.5°C) in leeward dune/dry lake area at N. periphery. NOTE $\Rightarrow$ River which forms N. boundary is now dry! 1010 - <u>A. b. asper</u> juvenile seen in coastal dunes. 1031 - <u>A. b. asper</u> adult ♂ shot, $T_B = 35.9^\circ\text{C}$, in inter- dunal area. 1047 - <u>Testudo</u> <u>g. graeca</u> (22992-22993) collected from <u>Mitranis</u> <u>retusa</u> in leeward dune/dry lake area. 1058 - <u>Chamaeleo</u> <u>c. chamaeleon</u> (22991) collected on sand in leeward dune/dry lake. 1101 - <u>A. b. asper</u> juvenile seen in leeward dune/dry lake. 1107 - <u>T. g. graeca</u> (22992-22993), $T_B = 43.5^\circ\text{C}$, (??), in leeward/lake area. Dead <u>Natrix</u> <u>maura</u> adult seen in same immediate area - decapitated! (By whom and for what?). BIOMASS FIGURES / <u>A. PARDALIS</u> CONT'D. 16 MAY 72 Area located on G.P. 1 between Medenine and Ben Gardane

16 MAY 72

between km markings 510 and 511 approximately 30 km from Medenine. The white house is located close to km 511.

As I arrived ca. 0700 hrs, there were camels grazing on site (= area) I. It is cloudy and the wind is quite strong.

~~0815~~ - Start Area III at 0800

0815 - 2 A. p. pardali^{adult}, (σ^+ + ϕ) seen at NW corner.

0825 - σ^+ adult A. p. pardali seen in loose sand

~~0905~~ 0910 - A. p. pardali ϕ in Rhontenium, $T_B = 43.5^\circ\text{C}$.

0921 - A. p. pardali ϕ in open sand $T_B = 43.5^\circ\text{C}$.

0927 - σ^+ A. p. pardali in Rhontenium, $T_B = 43.5^\circ\text{C} > 34^\circ\text{C}$.

0932 - ϕ A. p. pardali from hole in open, hard-packed, clay $T_B = 43.5^\circ\text{C} > 34.5^\circ\text{C}$

0939 - ϕ A. p. pardali adult seen in Rhontenium

0946 - σ^+ A. p. pardali in Rhontenium $T_B = 43.5^\circ > 34^\circ\text{C}$

0950 - σ^+ A. p. pardali adult seen in open sand

0956 - A. p. pardali σ^+ in open sand, $T_B = 36.35^\circ\text{C}$

0959 - A. p. pardali ϕ in open sand, $T_B = 35.2^\circ\text{C}$

1000 - ϕ adult A. p. pardali seen ($\approx$ 0939 entry)

1007 - σ^+ A. p. pardali in open sand, $T_B = 43.5^\circ \approx 34^\circ\text{C}$

1012 - ϕ adult A. p. pardali seen on SE corner.

1015 - σ^+ + ϕ adult A. p. pardali seen in area of large bush

1027 - ϕ A. p. pardali in Rhontenium, $T_B = 43.5 > 34^\circ\text{C}$, body damaged by rubber band

1037 - ϕ A. p. pardali in Rhontenium, $T_B = 37^\circ\text{C}$.

1040 - ϕ A. p. pardali adult seen in Rhontenium

1048 - ϕ A. p. pardali in Rhontenium, $T_B = 36.9^\circ\text{C}$

1122 - σ^+ A. p. pardali in Rhontenium, $T_B = 35^\circ\text{C}$

16 MAY 72

1129 - ♀ adult A. p. pordalin dug from hole beneath Rhantennium $T_B = 35^\circ C \approx 34^\circ C$

1140 - ♂ adult A. p. pordalin disappeared into (Beetle?) ~~hole~~ hole under Rhantennium

1200 - END.

S. OF AREA II (uncollected area, activity check)

1410 - Start

1422 - adult A. p. pordalin seen on Rhantennium stabilized mound, disappeared immediately into hole at plant's roots

1437 - adult A. p. pordalin seen in tall ($\approx 36"$) shrub, disappeared into hole at root system.

1444 - A. p. pordalin adult ♀ seen in Rhantennium

1500 - MOVE TO AREA III

1512 - A. p. pordalin adult seen in tall grass-like plant

1521 - ♀ A. p. pordalin in open sand, $T_B = 35.7^\circ C$

1528 - Adult A. p. pordalin ♂ (?) disappeared into roots of tall plant

1529 - Adult A. p. pordalin ♂ seen on NW corner

1550 - A. p. pordalin ♀, $T_B = 36.6^\circ C$, open sand

1600 - END

Block-body readings for 16 MAY 72 ($^\circ C$)

TIME	OPEN SHADE	SUN	WEATHER
0930	21 22.8	36 37	Overcast, wind
1000	21 22.8	38 39	Overcast, wind
1030	21.5 23.8	37.5 38.1	Overcast, Breeze
1100	23 24.6	41 42	Overcast, Breeze
1130	29 30.3	42 43	Overcast, Slight Breeze
1200	24 25.6	48 48.8	Overcast, Slight Breeze

16 MAY 72	1410	24 25.6	35 36/cloud	Overcast, wind
	1430	24 25.6	38 39	Overcast, wind
	1500	23 24.6	38 37	Overcast, wind
	1530	27 28.4	39 40	Clear, Breeze
	1600	25 26.6	35 36	Clear, Breeze

AREA III ³N

CMFS #	SEX	GRAM WT	MM S-U	MM TAIL	MM TL	NOTES
22994	♀	^{1.71} 5.0	58	84	142	Body damage
22995	♀	^{1.87} 6.5	63	100	163	
22996	♀	^{1.76} 5.5	57	65	123	Regenerated Tail
22997	♀	^{1.71} 5.0	56	86	142	
22998	♀	^{1.65} 4.5	58	92	150	
22999	♀	^{1.76} 5.5	58.5	96.5	155	
23000	♀	^{1.65} 4.5	56.5	15	71.5	Broken Tail; Alive
23101	♀	^{1.65} 4.5	55	71.5	125	Alive
23102	♀	^{1.65} 4.5	57.5	75	132.5	Alive
23103	♂	^{1.82} 6.0	59.5	86.5	146	Regenerated Tail Tip
23104	♂	^{1.96} 7.5	63.5	91	154.5	Broken Tail
23105	♂	^{1.91} 7.0	62.5	109	171.5	Regenerated Tail Tip
23106	♂	^{2.22} 11	71	133.5	204.5	Alive
23107	♂	^{2.00} 8	64.5	84.5	148.5	Alive; Regenerated Tail
23108	♀	^{1.82} 6	58	94	152	Alive

Medenine, 4 km E. by road, a D.O.R. Malpison
morepressulatus insignitus was collected at 1630.

17 MAY 72

Continue on Area III, Start ca. 0815 hr.

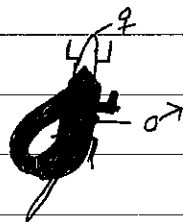
0824- ♀ A. p. pondali, T_B $35.4 \pm 0.3^\circ C$, taken from

17 MAY 92

NW corner of area III, not on area, but probably the ♀ often seen on NW corner - use 50% Total Mass ??

0843 - A. p. pardalis ♀, T_B $23.5 \pm 3.4^\circ\text{C}$, from sand dunes.

0857 - A. p. pardalis ♀ + ♂ in copulation, $T_B = 23.5 \pm 3.4^\circ\text{C}$ for both specimens, in open sand (= direct sun) beneath Rhantenum. ♀ w/ venter entirely on sand, ♂ mounted above as diagrammed:



the exact positioning of the ♂ tail is left out for I do not remember and did not note whether it was wrapped around the ♀ or simply lifted up over her body on the left (or facing) side. Hind feet on ♂ also not recorded, collection made to avoid losing the specimens as both had noted my presence

0911 - ♀ adult A. p. pardalis seen on knoll w/ Rhantenum and tall grass.

0915 - ♀ adult A. p. pardalis, $T_B = 23.5 \pm 3.4^\circ\text{C}$, open sand w/ Rhantenum (broken tail)

0922 - ♀ A. p. pardalis, $T_B = 23.5 \pm 3.4^\circ\text{C}$, dug from hole in Rhantenum (broken tail - tail saved) and in same as 0911 entry.

0928 - ♂ A. p. pardalis in Rhantenum, T_B $23.5 \pm 3.4^\circ\text{C}$.

1000-1010 = went to house, 2 A. p. pardalis seen S. of area IV

1019 - ♀ A. p. pardalis, open sand beneath Rhantenum,

$T_B = 27.5^\circ\text{C}$ 35.8

17 MAY 72	⇒ NOTE ⇒ Could <u>A. p. pardalis</u> be an "aggregate breeder"? If so, what effect would this have on Biomass Data? Data would then be valid only for month of MAY. At any rate, before the entire picture can be described, a year's study of populations would be necessary.
18 MAY 72	0600 - Sorocco coming in from S.; trip to Area III postponed. Have no idea as to effect of postponement but tomorrow will tell. As there were no sightings at last part of 17 MAY survey, I anticipate < 5 specimens will be seen next time. More than that would indicate (probably) immigration?
19 MAY 72	Area III (ca. Medenine, see 17 MAY) 0805 - Start 0854 - <u>A. p. pardalis</u> adult ♀ (?) on NE corner - resident? 0903 - <u>A. p. pardalis</u> adult ♂ w/ broken tail seen on NW corner 0920 - <u>A. p. pardalis</u> adult ♂ on center of E. border. 0935 - <u>A. p. pardalis</u> adult ♂ seen ca. 10 M. W. of NW corner (broken tail) 0958 - <u>A. p. pardalis</u> adult ♂ w/ broken tail dug from hole in <u>Rhazetium</u> to SE of NW corner. $T_B = ?$ 1007 - <u>A. p. pardalis</u> ♂ taken in area W. of III and E. of road. $T_B = 36.8^\circ\text{C}$. ^{36.7} 1010 - START AREA I 1017 - <u>A. p. pardalis</u> ♂ adult seen in <u>Rhazetium</u> 1033 - START AREA III 1043 - <u>A. p. pardalis</u> ♂, $T_B = 43.5 \approx 34^\circ\text{C}$, in <u>Rhazetium</u> and dug from hole - tail complete (probably from 0920) 1047 - ♂ young <u>Agana mutabilis</u> , $T_B = 39.15^\circ\text{C}$ in

19 MAY 72

Rhantennium

1050 - A. p. pardalis ♂, $T_B = 35.2^\circ\text{C}$, on E. perimeter
inside Area III, in Rhantennium

1101 - START AREA II

1110 - Adult ♀ A. p. pardalis seen in Rhantennium
along E. border Tail broken & saved

1118 - Adult ♀ A. p. pardalis seen in open sand on
W. border

1125 - Adult ♂ seen in E. border

1130 - Adult ♂ A. p. pardalis, $T_B = 43.5-43.4^\circ\text{C}$, in area
ca. 20 M. W. of area III, from Rhantennium

1135 - Start Area III

1144 - A. p. pardalis, ♀, open sand on S. border,
 $T_B = 35.7^\circ\text{C}$ (Heavy body damage)

1150 - A. p. pardalis ♂ on E. border, $T_B = 43.5-43.4^\circ\text{C}$

1200 - END

Black-Body Data for 19 MAY 72 ($^\circ\text{C}$)

TIME	OPEN SHADE	SUN	WEATHER
0830	18 ?	36 37	Clear, Slight Breeze
0900	20 ?	40 40.8	Clear, Slight Breeze
0930	20 ?	46 46.8	Clear, Slight Breeze
1000	22 23.8	50 50.8	Clear, Slight Breeze
1030	23 24.6	54 51.8	Clear, Slight Breeze
1100	24 25.6	47 47.8	Clear, Slight Breeze
1130	25 26.6	47 47.8	Clear, Calm
1200	24 24.6	46 46.8	Clear, Calm

19 MAY 72	CMFS #	SEX	GRAM WT	MM S-U	MM T	MM T-L	NOTES
	AREA III						
	23119	♀	^{1.71} 5.0	57	99	156	Body damage
	23120	♂	^{1.80} 6.0	64	35	99	Alive, Broken Tail
	23121	♂	^{2.00} 8.0	64.5	125	189.5	Alive
	23122	♂	^{2.12} 9.5	70.5	102	172	Alive, Regenerated Tail
	23123	♂	^{2.00} 8.0	64	116	180	Alive
	W. PERIPHERY OF III						
	23124	♂	^{2.04} 8.5	67.5	90	157.5	Alive, Regenerated Tail, ECDYSIS
	23125	♂	^{1.96} 7.5	64.5	117	182	Alive
	AREA III AGAMA MUTABILIS						
	23126	♂	^{2.15} 10	65	116.5	181	Alive
	Tail (♀) = 69 mm x 3 mm WT = 0.3 grams.						
	CMFS 23119-23125 = <u>Acanthodactylus p. porchali</u>						
	23126 = <u>Agama mutabilis</u>						
20 MAY 72	Gahes, 9 km W + 5 km S at Oued el Beida, SABUOCH + Dahri Ali from 0830-1200N. From along stone retaining walls under a clear blue sky and temperature ca. 80°F, we collected: 0854 - <u>Eremias g. gutturalis</u> ; 0936 - <u>Psammotrogon algerius</u> , and 0957 - <u>Tarentola mauritanica</u> . CMFS 23127-23130 assigned.						
21 MAY 72	Gahes, 21 km W + 19 km N, in area of a valley w/ much talus a series of <u>Chalcides o. subtypicus</u> (23131-23132) and <u>Tropiocolotes t. algerius</u> (23133-23135) were taken as follows: 0945: <u>C. o. subtypicus</u> , 0952 - <u>C. o. subtypicus</u> seen in rocks, 0959 - <u>C. o. subtypicus</u> from under rock in moist grass (in ecdysis), 1006 - <u>T. t. algerius</u> under conglomerate in dry soil, 1012 - <u>T. t. algerius</u> under conglomerate in dry soil; 1050 -						

21 MAY 72	<u>T. t. algericus</u> taken from hillside of Tolus where it was under a large piece of conglomerate in dry soil.
	15 km SW of Gabès at Zemlet ed Douariat, a <u>Uromastix acanthinurus</u> was collected by an anonymous Arab and purchased for D 0.800 (= \$1.60) on 22 MAY 72. Preserved, in life, on 22 MAY 72.
23 MAY 72	4.4 km W. + 12.6 km N Gabès, 0850 - <u>Malpelon m. manspessulorum</u> (23141) found S. of area border already described. Stomach contents = one dead <u>Lepus</u> (young). 0935 - <u>A. b. asper</u> seen in <u>Nitraria</u>. 0945 - <u>Testudo g. graeca</u> (23139-23140) found feeding on a yellow composite in lee/lake area to N. of normal site. 1007 - <u>Testudo g. graeca</u> in <u>Nitraria</u> of lee/lake area. 1010 - <u>A. b. asper</u> (23137-23138) juvenile, $T_B = 35.75^\circ\text{C}$, collected in inter-dunal area. 1030 - <u>A. b. asper</u> ♂ collected, $T_B = 35.75^\circ\text{C}$, in lee/lake area.