

SEROLOGICAL DIFFERENTIATION OF TWO SPECIES OF
TATERILLUS (RODENTIA, GERBILLIDAE) FROM
SENEGAL: *T. GRACILIS* (THOMAS, 1892) AND *T. PYGARGUS*
(CUVIER, 1832)

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RESULTS

Electrophoretic analysis

Cellulose acetate (Fig. 1A). The electrophoregram shows five main protein fractions. The most important one, albumin, has the fastest relative mobility. The second important main fraction is transferrin. The transferrin has been

T. gracilis (Thomas, 1892): 37/36 chromosomes (Fig. 1D):

Males: 37 chromosomes (fundamental number (FN) = 50):

metacentric chromosomes: 5 pairs;

acrocentric: 12 pairs;

sexual chromosomes: X/Y₁Y₂.

Females: 36 chromosomes (FN = 48):

metacentric chromosomes: 5 pairs;

acrocentric: 12 pairs;

sexual chromosomes: XX.

T. pygargus (Cuvier, 1832): 23/22 chromosomes (Fig. 1E):

Males: 23 chromosomes (FN = 46);

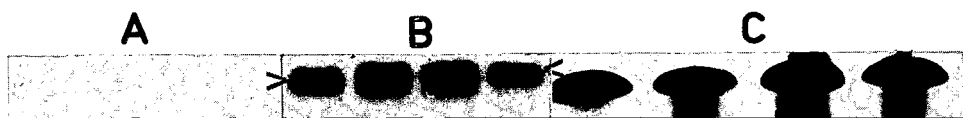
metacentric chromosomes: 20 pairs;

sexual chromosomes: X/Y₁Y₂.

TABLE 1—LIST OF THE *Taterillus* STUDIED WITH REFERENCE TO THE NUMBER OF CHROMOSOMES, THE MOBILITY OF THE ALBUMIN IN STARCH GEL AND IN ACETATE AND THE MOBILITY OF THE TRANSFERRIN IN STARCH GEL

No.	Sex	Chromosome number	Albumin mobility (starch gel or acetate)	Transferrin mobility in starch gel	<i>Taterillus</i> species
B 46	m	37	F	S	<i>gracilis</i>
B 74	f	22	S	F	<i>pygargus</i>
B 75	m	23	S	F	<i>pygargus</i>
B 80	f	22	S	F	<i>pygargus</i>
E 321	f	36	F	S	<i>gracilis</i>
E 324	m	37	F	S	<i>gracilis</i>
E 326	m	37	F	S	<i>gracilis</i>
E 327	m	23	S	F	<i>pygargus</i>
E 374	f	36	F	S	<i>gracilis</i>
E 375	f	22	S	F	<i>pygargus</i>
E 376	m	23	S	F	<i>pygargus</i>
E 377	f	36	F	S	<i>gracilis</i>
E 389	m	23	S	F	<i>pygargus</i>
E 390	f	36	F	S	<i>gracilis</i>
Tu 4	f	36	F	S	<i>gracilis</i>
Tu 52	f	22	S	F	<i>pygargus</i>
Tu 143	f	30	F and S	F and S	hybrid
Tu 144	m	30	F and S	F and S	hybrid
Tu 157	m	23	S	F	<i>pygargus</i>
Tu 162	f	36	F	S	<i>gracilis</i>
Tu 163	m	37	F	S	<i>gracilis</i>
Tu 175	f	22	S	F	<i>pygargus</i>
Tu 182	f	22	S	F	<i>pygargus</i>

F, Fast; S, Slow.



Females: 22 chromosomes (FN = 44).

Hybrids: 30 chromosomes (Fig. 1F).

The 30 chromosomes cannot be paired, but it is easy to separate what come from the male (Fig. 1F, a) and the female genome (Fig. 1F, b) For example, a male (Tu 145) is born by cross-breeding between a male *T. pygargus* and a female *T. gracilis*.

DISCUSSION AND CONCLUSIONS

Caryotypes

According to Matthey & Jotterand (1972) the Y_2 chromosome would be the half of an additional pair, the other half of which would be on the X chromosome by translocation. This kind of formula with X/Y_1Y_2 can also be found in Insectivora, Chiroptera and Artiodactyla.

The caryotypes of these two species are very similar: the fundamental numbers (FN) are not very different and some autosomes have many common characteristics (see Matthey & Jotterand, 1972). According to these authors, the 2N number and FN of these two species of *Taterillus* are less in relation to the other species of the genus, whose caryotypes are known (see Table 2).

TABLE 2—FEMALE CARYOTYPES OF SOME *Taterillus* SPECIES

	2N	FN
<i>T. congicus</i>	54	70
<i>T. emini</i>	44	68
<i>T. gracilis</i> from Haute Volta	36	46
<i>T. gracilis</i> from Senegal	36	48
<i>T. pygargus</i>	22	44

Electrophoretic analysis

Whereas the cytotoxic differentiation of *T. gracilis* and *T. pygargus* neces-

order to make assurance doubly sure, starch gel electrophoresis can be done (40 samples can be analysed side by side in the same run with our apparatus) in which the various transferrins have quite different positions. An indirect method can be also used which consists of adding serum of a known species into the sample to be analysed (Hubert & Baron, 1973). If we find two albumin bands then the unknown sample belongs to the other species.

The serum electrophoretic analysis of *Taterillus* from Senegal corroborates the cytotypic analysis of Matthey & Jotterand (1972) who distinguished two cryptical species confused under the name of *T. gracilis* Thomas. If morphological and morphometrical characteristics do not permit the separation of the two species, a simple serum analysis indicates two different biochemical characters: the albumin and the transferrin.

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