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## Note

# The C-banding pattern of the Egyptian Water Buffalo (*Bubalus bubalis*)

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## Summary

The diploid chromosome number of the Egyptian Water Buffalo is 50 of which 10 are meta- and submetacentric and the remainder are acrocentric including the X and Y. Pericentromeric constitutive heterochromatin is apparently absent in the meta and submetacentric chromosomes except for pairs 2, 3 and 4. All the acrocentric autosomes and the sex chromosomes have pericentromeric constitutive heterochromatin.

The karyotype of the Egyptian Water Buffalo (*Bubalus bubalis*) has been reported by DE HONDT and GHANAM (1971). The diploid number found was 50 of which 5 pairs were meta-and submetacentric and 20 pairs were acrocentric including the X and Y chromosome.

The present work was undertaken to establish the C-banding pattern of the Egyptian Water Buffalo.

Thirty animals (20 males and 10 females) from northern Egypt were studied. Blood samples were obtained from the jugular vein for leucocyte cultures. Chromosome studies were carried out on leucocyte cultures according to the method of DE GROUCHY *et al.* (1964).

Following storage of the slide for a month, C-banding was achieved by a modification of the technique of SUMNER (1972). Slides were incubated for 15 mn in saturated aqueous solution of barium hydroxide at 50 °C. They were, then, rinsed in distilled water and placed in 2 × SSC (0.3 M sodium chloride and 0.03 M tri-sodium citrate, pH 7.2) for 2 h at 60 °C. The slides were then washed in distilled water and stained for 6 mn in 4 p. 100 Giemsa. Following which microscopic examinations were conducted.

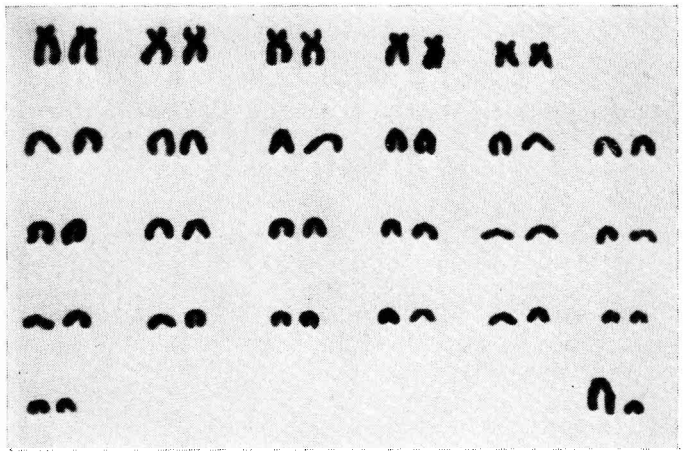

FIG. 1. — *Karyotype of male Egyptian Water Buffalo*
*Caryotype mâle du Buffle d'eau égyptien*

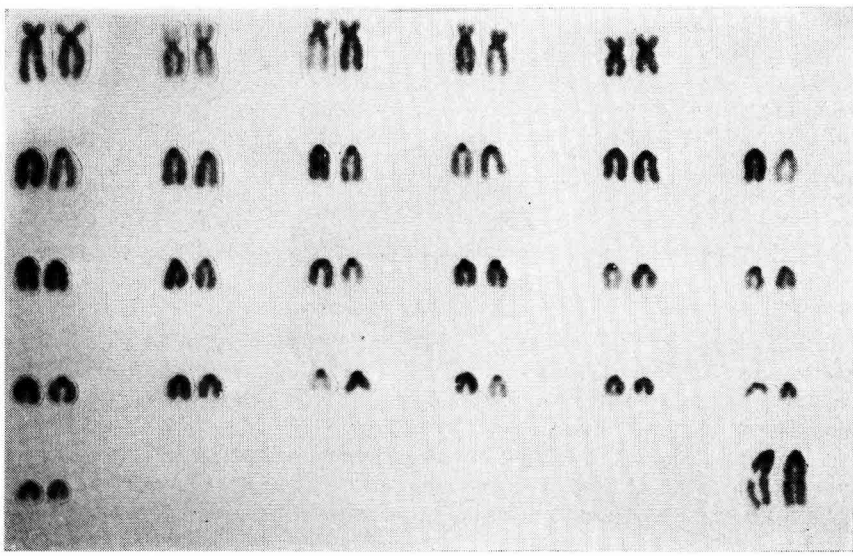

FIG. 2. — *The C-banding karyotype of female Egyptian Water buffalo*
*Le caryotype en bande C du Buffle d'eau égyptien*

The diploid chromosome number of this sample of Egyptian Water Buffalo was found to be 50 of which 5 pairs were meta- and submetacentric and 20 pairs were acrocentric including the 2 sex chromosomes. The X chromosome was observed to be the largest acrocentric and the Y one of the smallest (fig. 1).

The distribution of constitutive heterochromatin (C-banding) in the genome can be described as follows : constitutive heterochromatin is apparently absent in the meta and submetacentric pairs numbered 1 and 5 but a slight suggestion

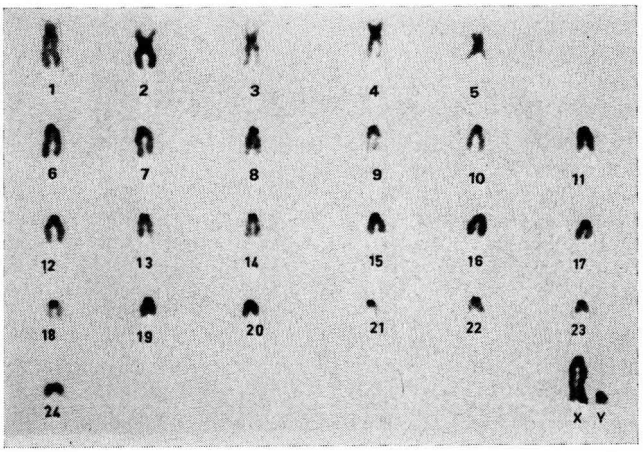


FIG. 3. — *The C-banding karyotype of male Egyptian Water Buffalo*

(One chromosome of each pair is put. The numbers arbitrarly assigned are given to let the understanding of the text.)

*Le caryotype du Buffle d'eau égyptien en bande C*

(Un chromosome de chaque paire a été représenté et les numéros affectés à chacun ont été donnés pour permettre une meilleure compréhension du texte).

of pericentromeric heterochromatin can be seen in pairs 2, 3 and 4. All the acrocentric chromosomes including the X and Y have a densely stained centromeric region (fig. 2 and 3).

These observations indicate that the karyotype of Egyptian Water Buffalo is similar to that of the Asian River Buffalo (Murrah Buffalo) described by FISCHER and ULBRICH (1968). The same results than these of SHEURMANN *et al.* (1974) and ROMMELT (1976) studing the C-banding pattern of the Ceylan Water Buffalo and Malaysian Murrah Buffalo were found here except for the Y chromosome which they described as being darkly stained only in its distal area.

The origin of the Buffalo in Egypt was reviewed by COCKRILL (1974). They were introduced from India, Iran and Iraq shortly after the arab invasion, about the middle of the seventh century. The present finding that the Egyptian Water Buffalo has a similar C-banding karyotype to that of SCHEURMANN's animals from Ceylan supports this historical fact.

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## Résumé

*Caryotype du Buffle d'eau égyptien par les bandes C*

Le Buffle d'eau égyptien possède 50 chromosomes dont 10 méta et submétacentriques et 40 acrocentriques. Les gonosomes X et Y sont acrocentriques. L'hétérochromatine constitutive péricentromérique est apparemment absente sur les chromosomes méta- et submétacentriques à l'exception des paires 2, 3 et 4. Tous les autosomes acrocentriques ainsi que les deux chromosomes sexuels possèdent de l'hétérochromatine constitutive péricentromérique.

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