sickling phenomenon in 0·9 per cent saline solution was demonstrated in red, sika, barasingha, fallow, roe and muntjac. Père David and chital deer red cells were not examined for this phenomenon. None of the twenty-one samples of Chinese water deer red cells sickled in physiological saline or in 2 per cent sodium metabisulphite.

The sika samples examined included two of the Manchurian variety of the species. The haemoglobins of these were indistinguishable from the type species.

As the haemoglobin of the Indian muntjac was found by Naik[1] to separate into one fraction only, it appears likely that the muntjacs feral in south-east England are of the Chinese species. Genetic admixture with Indian muntjacs which escaped from parks many years ago is a possibility and haemoglobin analysis may provide a point of taxonomic separation of the species. It may also help in strain separation of the Chinese water deer, but appears to be of no value among the genera of larger deer.

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GENETICS

Another *XYY* Phenotype

ON seeing the webbed neck of a 24 year old mentally retarded male, one of us (M. B.) was prompted to question the cytogenetic sex. The man in question was of average height, well built, with adult genitalia, descended testes, and male hair distribution. The inguinal lymph nodes were palpable. He was living in an institution among mental defectives and had a history of suspected arson, seizures, emotional disturbances and familial mental retardation of marginal degree.

Chromosomes were counted in fifty-four, and karyotypes were assembled from twenty-two, metaphases of cultured leucocytes[1] stained lightly with orcein and photographed by phase microscopy. The *Y* and *G* group chromosomes were further distinguished by shadowing with platinum–carbon[2] and by autoradiography of chromosomes labelled with tritiated thymidine 3 h before mitoses were arrested with colchicine[3].

Ninety per cent of the cells contained forty-seven chromosomes. The karyotype showed an extra small acrocentric that fitted morphological criteria for the *Y* chromosome[4]. The aneuploidy of the few cells with more or less than forty-seven chromosomes was variable and unrelated to the sex or *G* group chromosomes. One endoreduplicated metaphase contained ninety-four chromosomes.

Shadowing (carried out by courtesy of Dr M. R. Edwards) emphasized the satellite distinctions, and autoradiography the differential labelling pattern of the *Y* and *G* group chromosomes (Fig. 1). Relative asynchrony in labelling of the two *Y* chromosomes occurred, as has been noted before[5,6].

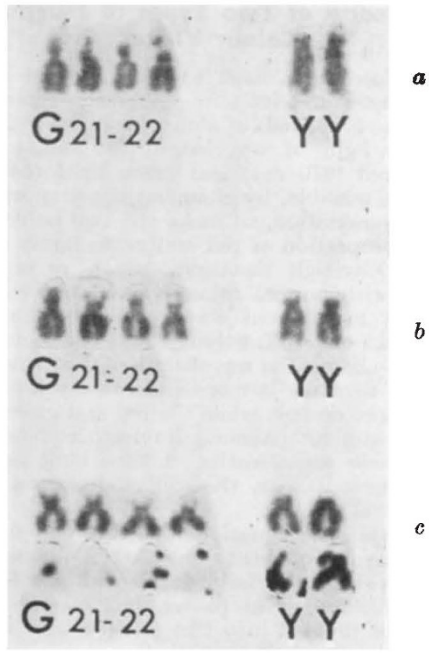

Fig. 1. Three partial karyotypes of *G* group and *Y* chromosomes. (*a*) Stained with aceto-orcein; (*b*) shadowed with platinum–carbon; (*c*) autoradiographed after 4 h of exposure to tritiated thymidine.

This phenotype is unique among the twenty-five or so *XYY* genotypes recorded for his striking webbed neck. Its clinical significance is not clear, however, other than to trigger associations, because its concomitance in "male Turner's" syndrome is usually accompanied by a normal male karyotype[7]. Nor is there much likelihood of our patient having been a cytogenetic Turner's mosaic, because recorded *XO/XYY* phenotypes are female[8,9].

Our case adds to the variable phenotype presented by *XYY* genotypes, and a recent dissenting report of synchronous labelling of *YY* chromosomes in two normal males[10] suggests that phenotypic differences are reflected in a variable autoradiographic pattern. Reference to the phenotype as the "*YY* syndrome" is, indeed, inadvisable[11].

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