the maintenance of both natriferic and hydroosmotic activities. However, the biological potencies of the analogues tested decrease by at least one order of magnitude compared to that of oxytocin. Furthermore, the loss in natriferic activity is very similar to the loss in hydroosmotic activity.

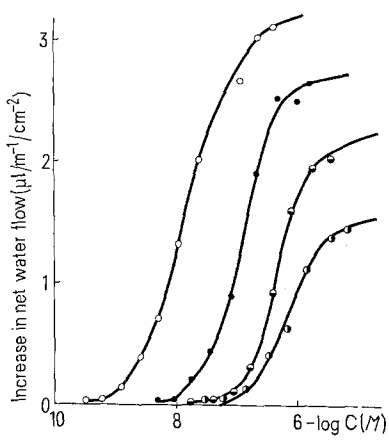
The data given in Table III indicate that the modifications introduced in the structure of the oxytocin ring affect the apparent affinity for the receptor and the intrinsic activity of the hormone receptor complex in different ways. Comparison of DCOT-1, DCOT-6 and DDCOT shows that the two sulphur atoms are not equivalent. In both the natriferic and hydroosmotic tests, the replacement of the S atom in position 1 by a CH_2 group leads to a more pronounced decrease in affinity than the same replacement in position 6. The decreases in affinity induced by replacement of one or other of the S atoms are not cumulative; pD_2 values for DDCOT are very close to those of DCOT-1. On the other hand, natriferic and hydroosmotic intrinsic activities are unequally modified. The intrinsic hydroosmotic activity of $DCOT_1$ decreases by a factor of 2 while its intrinsic natriferic activity (Figure) remains unchanged. In both tests, the intrinsic activity of DDCOT is significantly lower than that of oxytocin. Finally (Table III) modification of the ring size in DES-S-OT, DES-SS-OT and HL-OT is compatible with the maintenance of at least 80% of the intrinsic activity of the parent oxytocin.

Discussion. The observation that deamino carba-analogues are able to elicit hydroosmotic and natriferic responses by frog epithelial cells confirms the previous conclusion[3,4] that the presence of a disulphide bridge in the hormonal molecule is not a prerequisite for activity.

Comparison of the activities of the mono and dicarba analogues on the one hand, and of $DCOT_1$ and $DCOT_6$ on the other, shows that the position of the sulphur atom replacement plays an important part. Although the precise conformation of these analogues is not yet known, circular dichroism data for deamino carba analogues indicate that their basic structural parameters are similar[13]. Thus the differences observed between these analogues might reflect a specific role of sulphur atoms in the hormone receptor interaction rather than the consequences of important structural modifications of the whole molecule induced by $S–CH_2$ interchange.

Frog skin and bladder receptors are less sensitive to a modification of the size of the hormone ring than are the rat uterus and kidney receptors[13]. Thus DES-S-OT, an analogue with a reduced ring size, and HLOT, an analogue with an enlarged ring size, have similar natriferic and hydroosmotic activities, while[14] the uterotonic and antidiuretic activities of HL-OT are respectively 6, 7 and 3 times higher than those of DES-S-OT.

Despite the fact that hydroosmotic and natriferic responses were measured on different structures, the observation that $DCOT_1$ exhibits different intrinsic activities in the two tests in in line with the previous proposal (for review, see[15]) that different receptors are involved in the hydroosmotic and natriferic responses.



Hydroosmotic dose-response relationships for oxytocin deamino-carba analogues. Ordinates: increase in net water flow above the resting value. (Frog bladder incubated with Ringer inside and 20-fold diluted Ringer outside: osmotic gradient: 230 mOsm/l). ○, Oxytocin; ●, DCOT-6; ◐, DDCOT; ◒, DCOT-1.

Résumé. Des analogues déaminés de l'ocytocine, dans lesquels l'atome de S en position 1, 6 ou 1 et 6 a été remplacé par un radical CH_2, de même que des analogues déaminés dont la partie cyclique a été raccourcie ou allongée, restent capables d'augmenter la perméabilité à l'eau de la vessie ou le transport actif du sodium par la peau de la grenouille. L'ensemble des substitutions étudiées réduit de manière importante (85 à 300 fois) l'affinité du peptide pour son récepteur et affecte de manière variable son activité intrinsèque.

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Chromosomal Polymorphism in the Phyllostomatid Bat, *Mimon crenulatum* (Geoffroy)

The chromosomes of 49 species of bats of the family Phyllostomatidae have been described based on the examination of 441 specimens[1–13]. In only two species, *Mesophylla macconelli*[8,9] and *Uroderma magnirostrum*[10], have chromosomal polymorphisms been reported. We have found an addition polymorphic chromosomal system in specimens of *Mimon crenulatum* collected from localities in Trinidad, Colombia, and Peru, spanning a distance of more than 1500 miles.

Specimens were obtained by use of mist nets from natural populations and karyotypic preparations were made from in vivo cultures of bone marrow[9]. A minimum of 25 spreads from each individual was examined. Voucher specimens from Peru were deposited in the collections of the Louisiana State University Museum of Zoology (LSUMZ)[14], and the Museum of Vertebrate Zoology, University of California (MVZ) and the material from Colombia and Trinidad is in The Museum, Texas Tech University (TT).

A total of 20 specimens was examined (8 from Trinidad, 6 from Colombia, and 6 from Peru) and all had a diploid number of 32. Chromosomal data for the 20 specimens are

presented in the Table. Representative karyotypes are shown in Figure 1 and 2. The polymorphism is probably restricted to the 5th largest pair of autosomes. These chromosomes exhibit at least 3 different morphological types – one is submetacentric (M, Figure 1), a second type is subterminal (S, Figure 2), and the last type is acrocentric (A, Figure 2). In all cases each chromosomal type is easily distinguished from the others. In as much as diploid number remains constant, the chromosomal rearrangements probably arose by pericentric inversions or centric shifts.

Chromosome phenotype of autosomal pair 5 of *Mimon crenulatum* from 3 localities

Locality	Phenotype					
	SM/SM	SM/ST	SM/A	ST/A	ST/ST	A/A
Trinidad	1♀	1♀2♂♂	3♂♂	1♂	0	0
Columbia, Leticia	1♀1♂	0	1♀	1♀1♂	0	1♂
Peru: Balta	1♂	0	3♀1♂	1♂	0	0

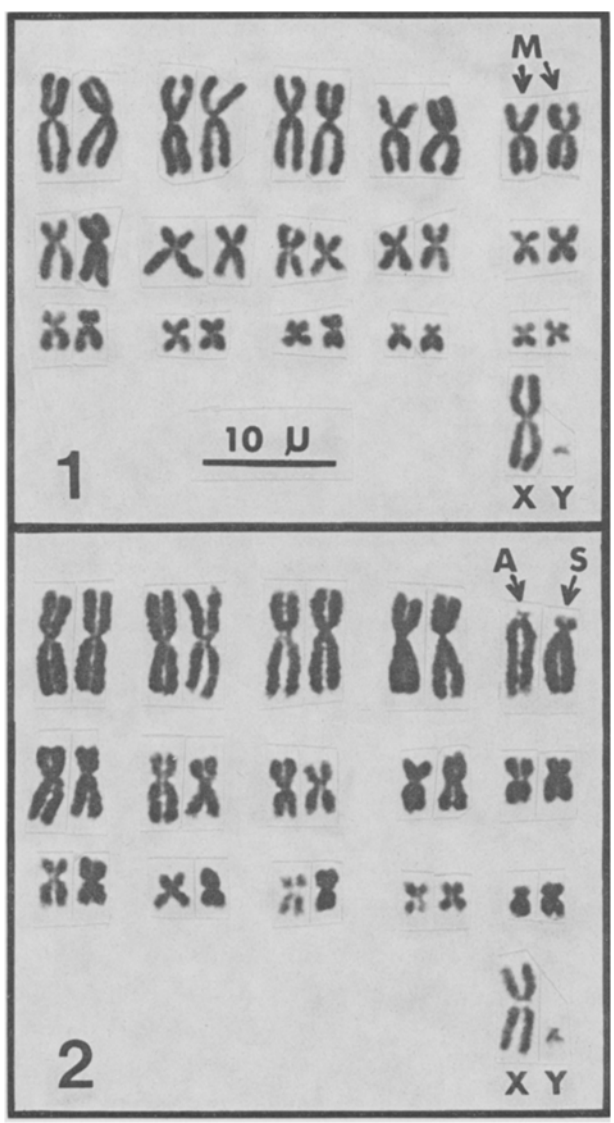

Fig. 1 and 2. Karyotypes of two male *Minon crenulatum* from Leticia, Colombia. In Figure 1 note that the 5th largest pair is metacentric (M). In Figure 2 note that one to the 5th largest pair of elements is acrocentric (A) and the other is subterminal (S).

Perhaps the most interesting aspect of this polymorphic system is that all 3 chromosomal morphological types are found in the 3 areas (see Table) where the species has been studied. For this polymorphic system to survive over such a wide geographic area, it must either offer a selective advantage to the species that is greater than the expense of its maintenance or be selectively neutral.

Specimens examined-*Trinidad:* Las Cuevas (3♂♂:1♀) 5264, 5340, 5341, and 5448; San Rafeal (1♂) 5460; Caura Valley, St.George Co. (1♂) 5379; Blanchisseuse (1♂:1♀) 5374, 5375. *Colombia:* Departamento de Amazonas, Leticia (3♂♂, 3♀♀) 8826, 8841, 9448, 8828, 9042, 9043. *Peru:* Departamento de Loreto, Balta, Rio Curanja, (3♂♂, 3♀♀) LSUMZ 14087–14090, MVZ 136404 and 136405.

Resumen. Se discribe el polimorfismo cromosomal en el murcielago *Mimon crenulatum* desde localidades en Trinidad, Colombia, y el Perù. Se hallaron tres tipos morfológicos para cromosomas considerado a representar el quinto par de autosomas en ejemplares de cada region geogràfica donde hemos estudiado la especia. Los tres tipos morfológicos de los cromosomas del quinto par evidentemente originado por medio de inversiones pericentricas son metacéntrico, subtelocéntrico, y acrocéntrico.

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