KARYOLOGICAL ASPECTS OF PHYLOGENY AND TAXONOMY OF PINNIPEDS

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Existing cytogenetic data lead to the following conclusions: 1) the Pinnipedia families constitute a single evolutionary line; 2) the Phocidae group, which includes genera whose karyotypes contain 34 chromosomes (Monachinae, Cystophorinae, *Erignathus*), originates from the same ancestors as Otariidae; 3) the Phocidae branch, consisting of genera whose karyotypes contain 32 chromosomes (Phocinae without *Erignathus*), is an evolutionary continuation of the branch of 34-chromosome Phocidae.

It is difficult to classify the Phocidae genera into groups on the basis of morphological data because of the considerable interspecific differences. Best substantiated is the Phocidae system in which true seal genera constitute three subfamilies: Monachinae, Cystophorinae and Phocinae (Scheffer, 1958; Chapskiy, 1963, 1974).* One of its main criteria is the number (formula) of incisors. Karyological studies revealed heretofore unknown intergeneric relations. There is also sufficient substantiation for including Phocidae genera in the subfamilies Monachinae and Phocinae according to karyological data (Anbinder, 1972, 1974). Although in taxonomy the use of an

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aggregate of indices of different approaches is more reliable, in this instance we probably have an alternative.

The genus *Erignathus* cannot only be eliminated from the subfamily Phocinae according to karyological data, but it stands apart among all Phocidae (Arnason, 1974) to some extent (according to the specific nature of bands demonstrable in chromosomes). This could either indicate that some chromosomal features of *Erignathus* evolved faster than in other 34-chromosome genera, or that *Erignathus* is relatively older. Bearing this in mind, as well as the distinctions of geographic distribution of *Erignathus*, it would be useful to search for signs (on different levels of organization) in common with Otariidae. The same applies to the genus *Monachus*, which is similar to *Erignathus* in some respects but which has been little studied.

Another important question is that of the transitional link between closely related Phocidae groups with 34 and 32 chromosomes. O. Arnason (1974) found that the genus *Cystophora* is closest to Phocinae according to chromosomes. However, *Cystophora* differs so little from *Mirounga* and Monachinae karyologically that further proof is definitely needed. There is inadequate justification (Chapskiy, 1974) for separating the genera *Cystophora* and *Mirounga* and including *Cystophora* in the Phocinae subfamily (King, 1966) and it contradicts the karyological data.