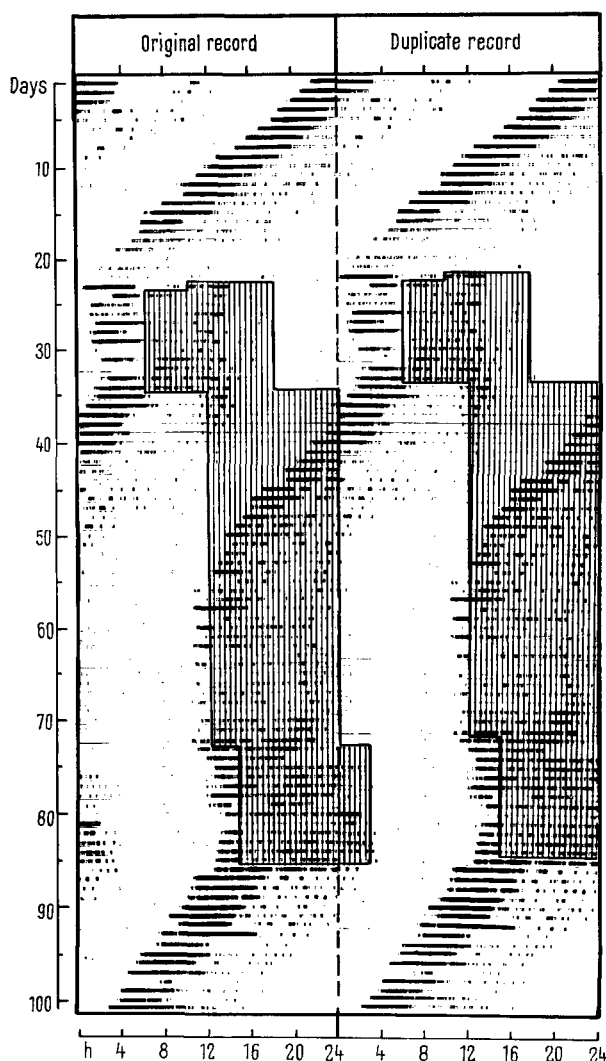




after a few delaying transients. When the bird is returned to constant conditions without sound cycle (day 86) the activity rhythm regains its spontaneous frequency ($\tau = 23.4$ h).

The results demonstrate the synchronizing effect of species-specific song cycles on circadian rhythms of birds in the experimental set-up employed. They provide a clear example of an acoustic (social) 'Zeitgeber' in intact animals. The extent to which species-specific sound production by birds is concerned as a secondary 'Zeitgeber' under natural conditions beside the undoubtedly greater effects of the light-dark cycle cannot at present be evaluated.

Zusammenfassung. Die in konstanten Licht- und Temperaturbedingungen von 24 h abweichende, circadiane Aktivitätsperiodik von 3 Zeisigen und 1 Girlitz, konnte durch Artgesang, der den Tieren täglich 12 h lang in einem 24-stündigen Zyklus über Lautsprecher vorgespielt wurde, synchronisiert werden. Mit diesen Ergebnissen ist nachgewiesen, dass auch akustische (soziale) Reize als Zeitgeber wirken können.

E. GWINNER

Max-Planck-Institut für Verhaltensphysiologie,
Seewiesen und Erling-Andechs, Obb. (Germany),
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Locomotor activity rhythm of a Serin. On the left-hand side, successive 24 h strips of continuous record have been mounted beneath each other. On the right-hand side, the original record has been duplicated to provide a better survey. The bird was kept at 18°C and in constant light intensity of 5 Lux. Periods of sound presentation (60 db) are indicated by vertical hatching.

Regeneration of Feline Ventral Roots

Extensive knowledge has been collected on regeneration of mixed peripheral nerves, but very little on the regenerative capacity of spinal roots because insufficient interest has been devoted to the subject. This investigation deals with the ability of feline ventral roots to regenerate after their transection. For surgical restoration of the root continuity end to end, a tubulation technique with a Millipore microfilter was used. Using bioelectrical and histological techniques, functional and anatomical reconstitution of severed lumbosacral ventral root fibres, innervating *skeletal* muscles (the gastrocnemius-soleus muscles), could be demonstrated. Also, functional success could be obtained when approximating severed ventral root stumps from different ipsilateral spinal levels, i.e. L6 to L7 or L6 to S1. This was shown to constitute a technique for by-passing motor activity to levels distal to a cord transection, which might be of clinical value in selected types of spinal injuries. Functional restoration

of severed ventral root fibres innervating *smooth* muscles (the detrusor muscle of the bladder) could also be demonstrated, as judged from bioelectrical and cystometrical data. The fact that no failure was encountered in a series of 23 cats studied, strongly indicates the great capacity of ventral roots to regenerate after their transection.

Résumé. On démontre la capacité de régénération des racines ventrales des nerfs spinaux dont la résection a été pratiquée dans une série de 23 chats. Il y a eu récupération anatomique et fonctionnelle après l'anastomose des racines ventrales innervant des muscles striés et lisses.

C.-A. CARLSSON, J. SJÖSTRAND,
T. SUNDIN, and C.-A. THULIN

Department of Neurosurgery, Department of Histology
and Department of Surgery I, University of Gothenburg
(Sweden), March 15, 1966.