The results suggested that in Urodeles polymorphonuclear neutrophils have an important role in the immune reaction against allografts. Further research must be done to specify possible interactions with lymphocytic series and the ways which initiate the proliferative response.

Résumé. Chez l'Amphibien Urodèle *Pleurodeles waltlii*, la formule sanguine subit d'importantes varitions quantitatives au cours du rejet d'allogreffe. L'abondance particulière des polynucléaires neutrophiles dans la circulation pourrait être un phénomène non spécifique (élimination des complexes immuns) qui n'aurait pas d'équivalent chez les Vertébrés supérieurs. L'augmentation du nombre des cellules mononucléées est accompagné de certaines modifications morphologiques: on observe une multiplication de formes stimulées, en paticulier des cellules blastiques et des cellules de la lignée plasmocytaire.

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Seasonal Variation of Reserpine Pseudopregnancy in the Rat

Several authors have demonstrated that reserpine[1-3], as well as other catecholamine depletors[4], induce pseudopregnancy when administered to the rat. VAN MAANEN and SMELIK[5] have demonstrated that topical application of reserpine to the median eminence also results in pseudopregnancy, so implying that the catecholamine fibers and cells that have been described in the area[6,7] are responsible for the phenomenon. While studying the effects of various treatments on the appearance of reserpine-induced pseudopregnancy, we found a variability in the duration of the diestrus following reserpine in animals treated at different times of the year that suggested a spontaneous seasonal variation. To clarify this point, we devised the following experiment.

Material and methods. 139 female albino rats, 6 months old at the date of treatment, were used. The animals were individually caged and kept in an animal house with temperature maintained $\geqslant$ 24°C with natural illumination. The vaginal cytology was assessed daily by lavage during 4 weeks prior to treatment and animals showing irregular cycles were discarded. Reserpine (Serpasil CIBA) was administered on the day of estrus at the dose of 6 mg/kg by the i.p. route. Vaginal cytology was assessed daily thereafter to determine the length of the diestrus period that followed the reserpine treatment. This was taken as an index of pseudopregnancy duration. The study was performed for 24 months, from March 1968 until March 1970. During this period, groups of animals were injected each month with reserpine as stated above. The animals were treated only once and discarded. In order to determine the possible influence of ambient temperature, a number of rats were not housed in the animal quarters during the months of January–February and August–September of the 2nd year of the study. Fertility was calculated for 340 rats from the same colony as the experimental animals, by use of the coefficient $FC = \frac{7\,n}{d-21}$ where n = litter number and d = days of pairing with male[8]. During 1971, reserpine pseudopregnancy was induced in 3 groups of animals the months of February–March, July and August. Deciduomata were produced and measured accordingly to DE FEO[9].

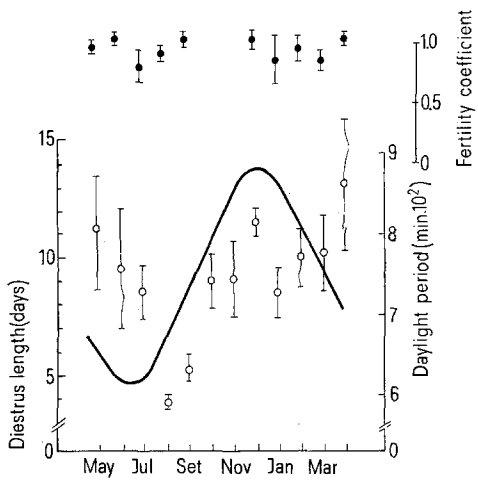

Fig. 1. Mean duration of diestrus following reserpine injection every month of the year. Each point represents pooled data from 2 years (mean $\pm$ S.E.). The continuous line represents mean day duration along the year at the lattitude of the laboratory. Fert. Coef. = fertility coefficient.

Results and discussion. The results obtained from the period 1968–70 are summarized in the Figure. A peak of minimum duration of the diestrus was observed that followed treatment in the months of August–September. Duration of diestrus after reserpine in August (3.90 ± 0.13) was significantly longer than pretreatment diestrus during the same month (2.17 ± 0.08). There were no differences in the pretreatment diestrus length throughout the year nor in the fertility coefficient as is shown in the Figure. Since the seasonal variation in reserpine-induced pseudopregnancy was seen in animals within and out of a temperature-controlled environnent but with natural illumination (Table I), this phenomenon might be related to the duration of daylight periods. In fact, the peak of minimum response followed the winter solstice (Figure).

The results of the experiments performed during 1971 confirmed the seasonal variation showing a significantly lower weight of deciduomata in August when compared to deciduomata induced in February–March (Table II, $p < 0.02$).

The step in reserpine-induced pseudopregnancy which is seasonally modulated might be located anywhere in the chain of events that lead to catecholamine depletion or

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Table I. Length of the diestrus that followed reserpine treatment (mean ± S.E.)

Temperature	Jan.–Feb.	Aug.–Sept.	
Into the animal house (t. ⩾ 24 °C)	10 ± 1.05	4 ± 0.18	$p < 0.001$
Out of the animal house (environment t.)	9 ± 1.87	5 ± 1.10	$p < 0.02$

Data from 1970.

Table II. Difference in weight between traumatized and control uterine horn

	Weight difference (mg)		
	$\bar{X}$	S.E.	n
February–March	636.5	152	9
July	353.7	80.9	14
August	209.4	61	9

Data from 1971.

at the level of the catecholamine-PIF interaction. It would be of interest to explore if the seasonal variation is associated with different degrees of catecholamine depletion to localize the seasonally sensitive step to one of the two groups of events mentioned above.

Resumen. Se indujo pseudogestación por reserpina en ratas, cada mes del año, durante dos años. La longitud del diestro que siguió al tratamiento se tomó como estimación de la duración de la pseudogestación. Los resultados mostraron una clara variación estacional con una longitud mínima del diestro que siguió al tratamiento con reserpina durante los meses de Agosto y Setiembre (Hemisferio Sur). Una serie de experimentos en los cuales la pseudogestación se midio por medio de la formación de deciduomas confirmó los hallazgos en un tercer año.

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Plasma Renin Concentration at Delivery and During the Newborn Period in Humans

Numerous studies have been done on plasma renin activity (PRA) and plasma renin concentration (PRC) in adults in various pathophysiological conditions[1,2], whereas only a few investigations on renin in infants and mothers have been performed at delivery[3–7]; however, at the present time there is no information available on PRA or PRC in the newborn period. The reason for this is that large amounts of plasma were necessary for the determinations. The development of micromethods has made these studies possible. Recent investigations in newborn dogs suggested a stimulation of the renin-angiotensin system during the first weeks of extrauterine life[8,9].

Methods. PRC was measured with a micromethod[10] based on BOUCHER's[11] procedure; 0.1 to 1.0 ml plasma and 1.0 ml Dowex 50WX2-$(NH_4)^+$ were incubated at pH 7.0 with 150 mg sheep angiotensinogen, providing 12–15 ng angiotensin/mg protein, dissolved in 2.0 ml trisphosphate buffer, containing EDTA and NaN_3, for 15 h at 37 °C. PRC is expressed in ng angiotensin/ml plasma/h incubation, mean ± SE.

Twelve healthy women (no signs of toxemia, no sodium restriction, no administration of diuretic agents during pregnancy) were studied during uncomplicated vaginal delivery prior to administration of any oxytocic agent; in 4 of them PRC was measured 6 days post partum for the second time during resting conditions.

In 12 corresponding newborns PRC was determined in cord plasma taken before placental delivery and in peripheral venous plasma in the first 48 h post partum (3–48 h). The infants did not get any food for 24 h after delivery and then were kept on tea or tea and milk up to 48 h. In 8 of them PRC was measured 3–10 days after delivery also. In some newborns more than one measurement of PRC was done in the respective period; for calculation we used the maximum values in the 3–48 h period and the last determination in the 3–10 days period.

Statistical evaluation was done using Student's t-test and Student's paired t-test.

Results and discussion. The results are summarized in the Figure. a) The PRC in cord plasma (14.7 ± 3.1) was higher than in maternal plasma (7.7 ± 1.0). This result is in agreement with the studies of BROWN et al.[3] and WERNZE and SEKI[6] who described higher PRC resp. PRA in cord plasma than in maternal plasma; in contrast other investigators[4,5,7] did not find significant differences between fetal and maternal PRC and/or PRA. With regard to the higher PRC in cord plasma than in maternal venous plasma it seems likely that the renin in cord plasma derives from the fetus; furthermore, the increase of PRC after delivery b) shows that the infant can

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