FERNANDEZ's technique[5]; the tip of the active electrode was placed on the bone near the small niche bored into the petrous bone and the microvoltmeter was adjusted to zero. The electrode was then shifted into the niche. Following this step we constantly observed the appearance of a positive potential which was to be ascribed to the vestibular DC RP against the petrous bone.

Procedures. (1) Thermic 'stimulation' of a labyrinth (cold and warm water) was performed and vestibular DC RP were recorded at the level both of the stimulated labyrinth and of the contralateral one. (2) Tetanic electric stimulation of the EVS (areas of the two Deiters nuclei and region of the raphe between the two Deiters nuclei) was performed and vestibular DC RP were recorded. (3) Electric stimulation of the EVS was performed as soon as the thermic (warm and cold) 'stimulation' of the recorded labyrinth had caused the maximal modifications of the vestibular DC RP. (4) Strychnine sulphate was administered intravenously (0.10 mg/kg body weight) in order to study its effect during stimulation of the EVS.

Results. (1) Cold 'stimulation' constantly causes a hyperpolarization of the stimulated labyrinth and simultaneously a depolarization of the contralateral labyrinth; warm 'stimulation' causes a reverse effect (feedback loop between the two labyrinths). (2) Electric stimulation of the EVS causes an increase (hyperpolarization) of the vestibular DC RP, after a latent time of 9–12 msec. The maximal effect was between 100 and 200 μV. With interruption of stimulation, the vestibular DC RP returned to their original values and sometimes a slight fall was observed. (3) Electric stimulation of the EVS increases the hyperpolarization caused by cold thermic 'stimulation' and reduces the depolarization induced by warm thermic 'stimulation'. (4) The intravenous administration of strychnine in subconvulsive doses reduces or abolishes the modifications induced on the vestibular DC RP by the stimulation of the EVS (DESMEDT and MECHELSE[6], and FEX[7] in this way blocked the effect of electric stimulation of Rasmussen's bundle on cochlear potentials).

Riassunto. La stimolazione (termica, elettrica) del sistema vestibolare efferente induce delle variazioni nei potenziali continui labirintici, derivati a livello del crus commune. Viene data la dimostrazione dell'esistenza di un feedback loop tra i due labirinti.

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Clinica ORL, Università di Padova (Italy), October 20, 1964.

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A New Category of Females in the Life Cycle of *Brevicoryne brassicae* L.: the Ambiphasic Females

Particular forms which are intermediate between virginoparae and sexuales often appear in the life cycle of Aphids. As a matter of fact, virginoparae showing some typical morphological characteristics of the sexuales, and sexuales exhibiting features distinguishing the virginoparae, have been described in the literature. Some species of Aphids present in fact a wide range of intermediate forms between both categories. Previous authors studied such forms only from the viewpoint of external characteristics.

The present study was undertaken to determine the morpho-physiological correlations between intermediate forms and, respectively, virginoparae and sexuales of *B. brassicae*. This species has been bred under constant environmental conditions for the last 4 years. Both external features and ovarian morphology of all intermediate individuals have been examined in order to detect every possible correlated modification of these organs.

STEVENS[1] found casually two females of *Aphis rosae* showing egg-strings and winter ovaries with developing eggs, associated in both groups of ovaries. The author did not, however, pay much attention to such phenomena and later authors completely ignored it. It is well known that the features distinguishing the virginoparae from the sexuales are: longer antennae, longer siphons and cauda, which also differ morphologically, in both forms; the number of subgenital plate hairs of virginoparae is lower than the number of hairs of sexuales, moreover the hind tibiae of sexuales are shorter than tibiae of virginoparae and show on both faces numerous sense organs.

The study of hundreds of individuals has demonstrated the existence of rare forms which are perfectly intermediate between virginoparae and sexuales. Such females cannot therefore be included in either of these two categories, as shown by the study of ovaries which present highly peculiar features. All such individuals show in fact egg-strings, developing parthenogenetic eggs and young oocytes in ovarian chamber, which are typical of the virginoparae, along with mature or developing winter eggs, which are normally found only in sexual females (Figure).

Such individuals with 'mixed ovaries' are to be included in a new category, because they cannot be considered either as modified virginoparae or as modified sexuales on account of their being externally intermediate and of their producing both types of eggs. Such females may be named 'ambiphasic females'.

The ambiphasic females, which are very rare in natural populations, appear as a rule in the strains of *B. brassicae* at the end of selection experiments for the appearance of virginoparae. Selection was obtained in constant environmental conditions. It is possible in fact to obtain strains which reproduce only by parthenogenesis, even in environmental conditions which are not favourable for virginoparae[2,3].

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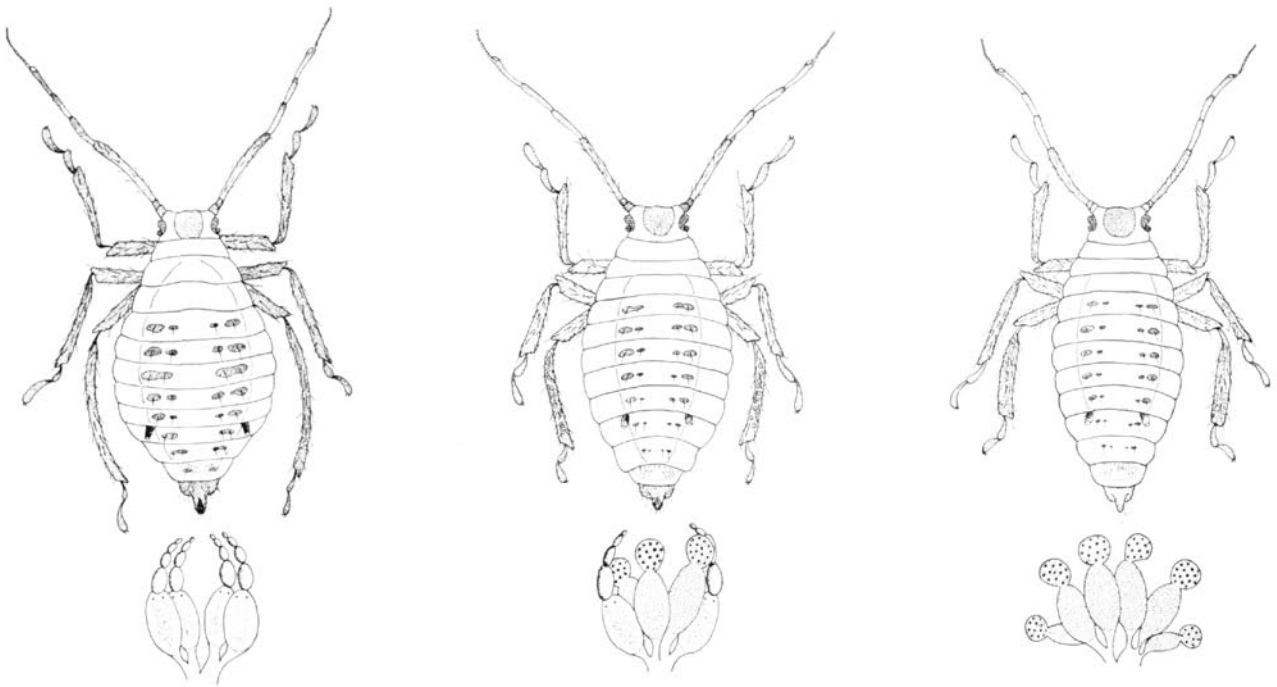

Diagram showing the external features and the ovarian morpholoyg of the three categories of females in the life cycle of *B. brassicae*.

It is therefore possible to regard the ambiphasic females as the result of a perfect 'genic balance' between factors for parthenogenesis and amphigony. Such balance may be obtained during selection experiments when a narrow threshold value is reached which allows the development of both parthenogenetic and amphigonic eggs.

Riassunto. Nel ciclo eterogonico di *B. brassicae* compaiono delle femmine perfettamente intermedie fra le partenogenetiche e le anfigoniche sia per i caratteri morfologici esterni sia per la morfologia degli ovari. Tali femmine compaiono alla fine della selezione in favore delle forme partenogenetiche, che viene effettuata in ambiente regolato per la comparsa delle forme sessuali. Sulla base di queste esperienze, tali femmine, che, per le loro caratteristiche, definisco con il termine di ambifasiche, possono essere considerate come il risultato di un equilibrio dei fattori della partenogenesi e dell'anfigonia, che si raggiunge, attorno ad un valore soglia, nel corso della selezione.

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An Antineoplastic C^{14}-Labeled Methylhydrazine Derivative in P815 Mouse Leukemia. A Metabolic Study

A series of methylhydrazine derivatives[1] have been reported to induce chromosomal aberrations in Ehrlich ascites cells[2] and a degradation of DNA in vitro[3]. Accordingly, the effect of these agents in vivo became of interest. Recently, WEITZEL et al.[4] described the formation of formaldehyde as a product of decomposition in vitro of one of these compounds, 1-methyl-2-*p*-(isopropylcarbamoyl)benzylhydrazine hydrochloride (MBH) (Ro 4-6467). They suggested that formaldehyde so formed might act as an alkylating agent. Although formaldehyde in vivo would be expected to contribute to the formaldehyde pool for the de novo synthesis of the purine bases, adenine and guanine (C_2 and C_8 atoms), and the methyl group of thymine, the possibility that it might alkylate any of the purine and pyrimidine bases of DNA and RNA could not be excluded. The fact that a related compound, *p*-hydrazinomethylbenzoic acid, isopropylamide hydrochloride (Ro 6-0233), which differs from Ro 4-6467 by lacking the N-methyl group, is biologically inactive as a tumor inhibitor[5] suggests that the methyl group in MBH

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