OGUMA[6], who showed $2n♂ = 15$. In this connection, I may report that I have invariably found $2n♂ = 17$ in a large number of available mitotic and meiotic cells from as many as ten individuals studied.

Although no meiotic divisions are represented in my nymphal material of the 2 species of *Deiphobe*, the sex chromosome mechanism in them has been carefully established from their spermatogonial stages. In *Deiphobe indica* three large unpaired chromosomes are readily identifiable, lying on the periphery of the spermatogonial metaphase. Two of them are characterized by a negative heterochromacy of the distal region of the longer arm and obviously represent X_1 and X_2. Further, the lagging of these three chromosomes during the later half of the spermatogonial anaphase confirms their identification as the sex chromosomes and definitely establishes X_1X_2Y system in the male of this species. In *Deiphobe brunneri* with $2n♂ = 19$, on the other hand, the possibility of X_1X_2Y mechanism is excluded because none of its above characteristics exists here. One of the 5 larger metacentric chromosomes in the spermatogonial metaphase of this species seems to represent the sex chromosome as is indicated by its presence as a single positively heteropycnotic, bipartite, straight or conflexed structure in all the spermatogonial interphases. The presence of two types of spermatids, one with a single positively heteropycnotic body representing obviously the sex chromosome and the other without it, in the adult males which are otherwise mature, is also suggestive of an XO system in this species.

The discovery of XO and X_1X_2Y systems within the same genus *Deiphobe* is indeed of great evolutionary importance and urgently warrants further exhaustive cytological sampling of this genus.

A detailed account of mitosis and meiosis in the various species of the Indian mantids will be published in the near future. Novo genus vic. *Cimantis-Eumantis* of the group Gonypetae and *Humbertiella* novo species (present paper) will be described elsewhere.

Zusammenfassung. Über Chromosomenzahl und Mechanismus der Geschlechtschromosomen von 13 Arten (8 Unterfamilien) indischer Mantiden wird berichtet. Die Gattungen *Humbertiella, Didymocorypha*, Novo Genus der Gruppe Gonypetae vic. *Cimantis-Eumantis, Parathespis, Creobroter, Empusa* und die Art *Deiphobe brunneri* zeigen im ♂ Geschlecht das *XO*-System. *Hierodula coarctata, Cheddikulama straminea* und *Deiphobe indica* zeigen $2n♂ = 27$ und X_1X_2Y.

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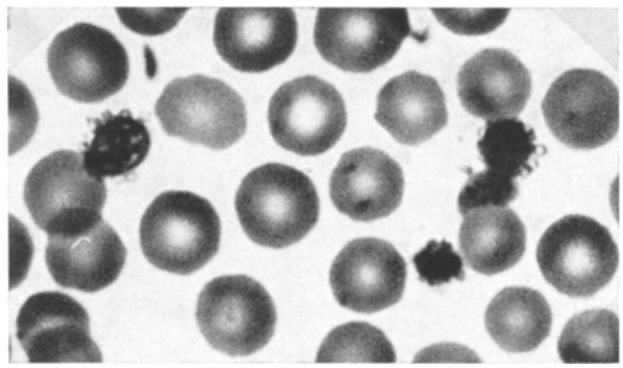
A Microorganism Affecting Bovine Platelets

In the course of studies of bovine tick-borne fever, Giemsa-stained blood smears of a splenectomized calf aged $1^1/_2$ years revealed the presence of delicate particles apparently attached to the surface of the platelets. These particles appear to represent a hitherto undescribed microorganism which seems to have a specific affinity to platelets, judging by the observations made so far.

The calf had been splenectomized more than one year previously and had subsequently been subjected to repeated inoculations of bovine and ovine blood. It had on several occasions suffered attacks of tick-borne fever, as well as piroplasmosis and eperythrozoonosis. The tests in progress at the time when the presumed new agent was discovered were intended for check on immunity to tick-borne fever.

When the first observation of particles attached to the platelets was made, 10 days had passed since the calf had last received an inoculum of bovine blood carrying tick-borne fever. In a blood smear made 6 days after the said inoculation no particles were yet positively seen. Starting on the day following discovery of the particles, the calf experienced a fever reaction, which lasted for 2 days. No other symptoms were recorded. During the fever reaction the number of particles was at its peak. It has since subsided at a uniform rate, but at present (1 month after the height of the reaction) particles are still found on occasional platelets. Subinoculation of another splenectomized calf resulted in the appearance of the same particles. Two normal calves have not reacted to such inoculation, nor has a splenectomized sheep.

The Figure shows the appearance of the particles in a Giemsa-stained blood smear. Fairly close resemblance to eperythrozoon organisms can be noted. The most prevalent form seems to be a delicate, weakly grey-staining ring, which is approximately 0.7 μ in diameter in most instances, but more deeply staining coccoid or rod shapes may also occur. At the height of the reaction one or several particles were found on practically every platelet. The irregular form and small size of many platelets suggest that they have suffered from the association. The particles show no tendency of attachment to any other



Giemsa-stained blood smear. Several ring forms of the agent are attached to platelets. Magnification × 2100.

blood cells. *Eperythrozoon wenyoni* was not observed to occur in connection with the reactions reported here.

The appearance presented by the discovered particles, as well as their manifestation in the affected animals during a limited period, their absence in the control animals and the positive result of subinoculation speak in favour of their being animate organisms. Reports can be found in the literature on interaction of platelets and some microorganisms, especially myxoviruses and mycobacteria. However, platelets are not the only type of cells affected by these agents. The agent concerned here may turn out to be the first recognized specific parasite of platelets.

Studies for further characterization of the agent are in progress. The first electron micrographs made in their course indicate resemblance to the eperythrozoon organisms[1].

Zusammenfassung, Bei Blutausstrichen (Giemsa-Färbung) eines splenektomierten Kalbes wurden an Thrombozyten angelagerte Partikel wahrgenommen, die Eperythrozoon glichen. Subinokulation eines zweiten splenektomierten Kalbes ergab dasselbe Erscheinungsbild. Es wird vermutet, dass diese Partikel einen bisher nicht beschriebenen Mikroorganismus darstellen.

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[1] J. Tuomi and C.-H. v. Bonsdorff, unpublished data.

Effect of Experimental Allergic Encephalomyelitis γ-Globulin Upon the Electrical Activity of the Brain

The experimental demyelinating disease is generally believed to be due to delayed hypersensitivity[1,2]. Paterson[3] has suggested that the circulating antibrain antibodies may play an important role in the pathogenesis of demyelination. Janković et al.[4] demonstrated recently that experimental allergic encephalomyelitis (EAE) can be passively produced by administration of serum from guinea-pigs with EAE directly into the lateral ventricle of the brain. In order to ascertain the activity of antibrain antibodies produced by diseased animals in a more delicate manner, the present experiment was undertaken to investigate electrical phenomena in various brain regions following the administration of EAE γ-globulin.

1 g of fresh rabbit spinal cord was homogenized in complete Freund's adjuvant, and chinchilla rabbits were injected with 0.4 ml of spinal cord-adjuvant mixture in the toe-pad of all 4 legs. The rabbits with clinical symptoms were bled. The sera were heated at 56 °C for 20 min and pooled, and γ-globulin fraction (EAE γ-globulin) was isolated[5] and lyophilized. γ-globulin from normal rabbit sera (normal γ-globulin) was prepared in a similar way. The pool of immune sera contained complement-fixing[6] and precipitating antibodies, while the pool of normal rabbit sera did not exert any antibody activity. Lyophilized normal and EAE γ-globulins were dissolved in distilled water (4.4–5.6 mg of protein per 0.2 ml). Gortical and deep electrodes were implanted[7] bilaterally into the frontal cortex, occipital cortex and caudate nucleus, and into the left hippocampus and left septum of normal rabbits[8,9]. The positions of the electrodes were verified histologically[10]. Cannula was inserted into the right lateral ventricle[11]. Animals were treated for 10 consecutive days with 0.2 ml of saline, and after this treatment 5 rabbits received through the cannula a single injection of 0.2 ml of EAE γ-globulin, and 4 animals were injected with 0.2 ml of normal γ-globulin. Electrical activity was recorded prior to the injection, immediately thereafter, and after 2, 3, 4, 5, 12 and 24 h.

The administration of EAE γ-globulin into the lateral ventricle of rabbit brain (Figure) caused a typical electroencephalographic inactivation: the appearance of high voltage slow activity in the frontal and occipital cortex, and acudate nucleus, and disorganization and irregularity in hypocampal θ-rhythm (rabbit No. 39). The high voltage slow waves in the frontal cortex and caudate nucleus were almost synchronous, but this activity was interrupted from time to time with short periods of faster rhythm which was similar to that seen before the injection. These bioelectrical abnormalities lasted for 3–4 h and were followed by corresponding behavioural inactivation. On the other hand, a single injection of normal γ-globulin, and multiple injections of saline, did not produce any apparent changes in electrical activity (rabbit No. 42).

The present results are in accordance with the reversible alterations in evoked bioelectrical responses of cultured cerebral cortex which occurred when the sera from rabbits with EAE and from patients with multiple sclerosis were added to the tissue culture medium[12]. In

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