the 'milk vein' was caudad (with the valves) and that in the front half craniad. However, in a multiparous pregnant sheep and in a multiparous lactating goat the flow was craniad in the prone position along the entire vein. No blood was leaving via the external pudic vein and the 'milk vein' contained a mixture of perineal and mammary blood.

These findings have been confirmed in four conscious goats in which the 'milk vein' on one side had been exteriorized as a vein loop just in front of the udder. The animals were examined standing quietly in a stand without restraint (generally eating). In the two multiparous animals examined, the 'milk vein' flow was craniad towards the end of one lactation, when completely dry and when pregnant again. However, in two virgin kids, the flow in the umbilical region was craniad, but farther back near the udder it was quite clearly caudad.

The occurrence of valves in the perineal vein of the cow has been previously reported by Becker[2], and Becker and Arnold[3] have also described them in the other veins of the cow (which we confirm), but the actual directions of flow were not determined. However, Gracev[4] described valves in the perineal vein of goats and found the flow to be towards the udder (craniad) in eighteen of twenty-one animals, presumably supine and anæsthetized.

Our preliminary findings would indicate that the direction of flow in the veins draining the area of skin in which the mammary glands develop in the ruminant is determined by the state and history of the animal. In the virgin the inguinal and perineal areas are drained by the caudal superficial epigastric and perineal veins into the external pudic. We suggest that the great increase in mammary blood-flow consequent on pregnancy and lactation is associated with a physiological dilatation of the veins, and consequent valvular incompetence, so that the flow in the 'milk vein' is apparently reversed in the standing position and may carry mammary and perineal venous blood. Whether the flow in the perineal and external pudic veins is ever reversed in any circumstances, and whether these results apply to the dairy and beef cow, remain to be determined.

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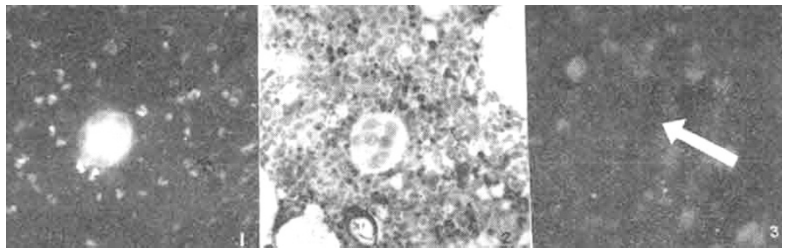
Origin of Blood Platelets

The conclusion of J. H. Wright[1] that blood platelets are detached portions of the cytoplasm of megakaryocytes has been supported by much circumstantial evidence, and is generally accepted[2], although unequivocal direct evidence is lacking.

In the course of other experiments[3], an antiserum against guinea pig platelets was prepared in rabbits,



(1) Megakaryocyte stained by conjugated anti-platelet globulins (× 180); (2) same field as (1), stained with hæmatoxylin and eosin (× 180); (3) megakaryocyte (arrow) treated with conjugated normal globulins (× 180)

which was rendered specific for platelets by repeated absorption with other cells and tissues, and which upon injection into guinea pigs caused complete disappearance of platelets from the blood without affecting the numbers of other cells. The globulin fraction of this serum was conjugated with fluorescein isocyanate by the method of Coons and Kaplan[4], absorbed well with liver powder and used for staining impression smears of guinea pig spleen and bone marrow, which had been fixed by immersion in 95 per cent ethanol at 37° for 15 min. After thorough washing in saline buffered at *p*H 7·5, the slides were mounted in glycerol and were examined by ultra-violet illumination at 3650 A. (using an 80-W. 'Osira' lamp and a quartz cone dark-ground illuminator).

Apart from polymorphonuclear leucocytes, which had a bluish-grey fluorescence, the only cells in the smears which fluoresced were megakaryocytes, and these had the apple-green colour of the fluorescein-coupled proteins. In smears treated with normal rabbit globulin conjugated with fluorescein, the polymorphonuclear leucocytes appeared the same, but megakaryocytes were unstained (Figs. 1–3).

Megakaryocytes must therefore share with platelets some characteristic unique antigenic structure, and this fact may be regarded as direct evidence of their relationship.

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Microfilaræmia in Rock Rabbits

During the course of studies on transmission of Bancroftial filariasis on Ukara Island in Tanganyika, domestic and wild animals were examined for microfilarial infections. Among those infected were rock rabbits, *Heterohyrax syriacus diesneri* Brauer. Of 28 specimens of mixed sexes, 57 per cent were infected. Records of the number of microfilariæ in thin blood films, prepared by a standardized technique, are compared with body-lengths of the individual hyrax in Table 1. The results may be of interest because they show a general positive correla-