such coincident pulsations have been recorded[6]; these are certainly due to direct pressure from the companion arteries in the umbilical cord. We have obtained comparable results with respect to the carotid rete of the sheep. In two heads from freshly slaughtered sheep the jugular vein and the common carotid artery were cannulated in the neck, and warm water was perfused via the artery at a pressure of 100 mm. of mercury. The venous pressure settled at 33 cm. of water. Rhythmic occlusion and release of the inflow channel gave rise to coincident pulsations in the venous flow, and the venous pressure rose by 12 cm. and overflowed the manometer tube. In a third sheep's head the vein cannulated was a large one, draining the extracranial tissues only. Rhythmic arterial pulsations had no effect on the flow in this vein, an indication that the venous pulsations noted in the first two experiments were directly transmitted from the arterial vessels to the venous lake within the cavernous sinus, the rete mirabile acting as a venous pump.

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BIOLOGY

Sex-Ratio in Mice

The impression gained from glancing through our mouse record cards suggested to us an unusual sex-ratio in some of our strains; some strains appeared to be consistently producing more males than females or vice versa. As impressions are notoriously misleading, it was decided to carry out a brief analysis.

Mice are produced and recorded at the Laboratory Animals Centre, Carshalton, in the manner described by Bartlett *et al.*[1]; under our system mice are sexed not at birth but at weaning. Because of this, the only litters included in the sex analysis were those where all the mice survived until nineteen days of age (that is, until weaning). Total numbers of litters per strain were considered to ascertain whether the proportion analysed could be correlated with abnormal sex-ratio. The period under review was March 1955. until February 1959.

Results obtained from this analysis are recorded in Table 1. Columns 2, 3 and 4 give the figures necessary for analysis of the litters, and columns 5, 6 and 7 those necessary for the sex analysis of the mice from litters where there was 100 per cent survival. The expected numbers of each sex for each strain were calculated on the basis that the male : female ratio equals 1 : 1 and a χ^2 goodness-of-fit test applied to observed and expected numbers of each sex. χ^2 values and probability-levels (P) are tabulated for each strain.

The results show that in the case of the *A*, *C57BR/cd* and the *LAC* albino strains, significantly more females than males were produced whereas the *CE* strain produced more males than females. Other strains showed a more normal sex ratio. No correlation is evident between survival of the whole litter and sex ratio.

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Methæmoglobin in Chronic Copper Poisoning of Sheep

After protracted periods of high copper-intake some species of farm animals accumulate large excesses of copper in the liver, and in certain circumstances this copper can be suddenly released into the blood and the clinical entity known as chronic copper poisoning develops[1–4]. Sheep are particularly susceptible, and the sequence of clinical symptoms is generally: anorexia, hæmolysis of red cells, hæmoglobinuria, anæmia, jaundice and death. Although the build-up of copper in the liver may take place over a period of weeks or months, the 'hæmolytic crisis' is an acute illness and death usually occurs within 2–3 days.

Although hæmolysis and hæmoglobinuria are constant features[5,6], the occurrence of methæmoglobin does not appear to have been recorded. In outbreaks of chronic copper poisoning[3,7], it has been observed that blood samples from affected animals are often chocolate brown in colour, and spectroscopic

Table 1

Strain	1 No. of pairs	2 No. of litters Total	3 No. of litters 100 per cent survival	4 Per cent	5 Total No. of mice	6 No. of ♂	7 No. of ♀	χ^2	P
A	57	333	184	55	775	345	430	9·32	0·01–0·001
C57BR/cd	65	346	242	70	1,413	638	775	12·90	0·01–0·001
LAC Albino*†	104	515	316	61·3	2,170	1,028	1,142	5·988	~ 0·02
CE	57	232	178	76·7	1,369	730	639	6·048	0·01–0·02
Balb/*C*	87	499	388	77·8	2,029	999	1,030	0·04736	0·95–0·05
C3H/He	67	378	211	55·8	1,176	591	585	0·00306	0·95–0·05
LAC Grey*	144	819	689	84·1	5,397	2,765	2,632	3·328	0·95–0·05
DBA/1	49	247	161	65·1	665	318	347	3·3218	0·95–0·05
A2G	70	401	284	70·8	1,528	734	794	2·356	0·95–0·05
CBA	46	223	126	56·5	796	397	399	0·005024	0·95–0·05
C57BL	45	155	94	60·6	445	231	214	0·6494	0·95–0·05

* Non-inbred strains. † Strain discontinued 1959.