DD Ee AA ones. If **A** be absent, the animal is black (in this series) and the addition of **D** has no visible effect.

Punnett now found a black male, whose gametic constitution must have been **Dd Ee Aa**. He mated this male to several **dd Ee aa** females. On the supposition that in the formation of gametes by this male the factors **D** and **E** are coupled, we ought to get: 1 **DdEEAa** (agoutiblack), 1 **DdEEaa** (black), 1 **DdEeAa** (black), 1 **DdEeaa** (black), 1 **ddEeAa** (agouti), 1 **ddEeaa** (black), 1 **ddeeAa** (Yellow) and 1 **ddeaaa** (tortoise), or agouti, black, agouti-black, yellow and tortoise in the ratio 1:4:1:1:1. The actual numbers were:

	Agouti	Black	Black-agouti	Yellow	Tortoise
Data	36	113	34	28	30
Expectation	30.125	120.05	30.125	30.125	30.125.

Punnett could further show that in reality all the yellows were heterozygous for **A** (nine were tested); further that all of seven agoutis tested were heterozygous for both **A** and **E**, and that several agoutiblacks tested were homozygous for **E** but heterozygous for **D** and **A**.

The methods of testing adopted were always back-crossings to animals lacking the factors for which the individual was to be tested. In my work with the factors which influence the colour in mice, I have always followed this same scheme, in preference to random matings of to be tested animals inter se. It is evident that several difficult questions can only be answered in this way.

It seems that the coupling between the two factors in Punnett's rabbit was complete, just as in all the cases of coupling or repulsion studied in animals. Two cases of coupling and one of repulsion are now on record in animals concerning factors without relation to sex, the repulsion being a case I found in mice, the second case of coupling being found by Morgan in *Drosophila*.
Hagedoorn.

Haecker, V. Über Kreuzungsversuche mit Himalaya- und Black-and-tan-Kaninchen. Mitt. Nat. Ges. Halle a/S. 2 1912.

Reziproke Kreuzung zwischen Himalaya-Kaninchen (-akromelanistische Albinos mit farbigen Abzeichen an Nase, Ohren, Pfoten und Schwanz) und Black-and-tan-Kaninchen (-schwarze Grundfarbe mit lohfarbenen und weißen Abzeichen) ergab in F_1 „abgeänderte“ Black-and-tans; in F_2 dreierlei Nachkommen: 1. „abgeänderte“ Black-and-tan; 2. schwarze Tiere; 3. „abgeänderte“ Himalayas.

Die abgeänderten Black-and-tans zeigen an Stelle der ausgebreiteten lohfarbenen Zeichnung eine weniger ausgebreitete und gelbliche, und zwar in verschiedener Intensität und Ausdehnung. F_1 und F_2 verhalten sich hierin gleich. Die abgeänderten Himalayas sind gegenüber den reinrassigen Tieren dadurch ausgezeichnet, „daß sie in der weißen Umrandung der Nasenlöcher und in der geflammten Zeichnung der Pfoten ausgesprochene Erbteile der Black-and-tans mit sich führen“.

In F_1 also „unvollkommene Dominanz“ der Black-and-tan Färbung, in F_2 bei der Kategorie der abgeänderten Himalaya „deutliche Beeinflussung in ihrer Zeichnung durch die black-and-tanfarbigen Aszendenten“.

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