

# Bent-nosed Red Deer in New Zealand

## A Case History

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WE READ with interest the reports by A.J. Hettler and the late Lea MacNally in *Deer* (November 1992, p558) of cases of "campylognathie" in European red and roe deer. We have closely observed a similar phenomenon in a research stag in New Zealand at Invermay, but we have a curious "twist in the tail".

As part of a study on red deer growth and nutrition 56 stag calves were collected from farm-bred hinds at about one day of age for hand rearing to induce tameness. This account concerns number 5 from this group, named by us as "Mr. Buckle". The calf was received on 20 November 1990; he weighed 8kg, which is about normal for a farmed stag calf in New Zealand, and his nose was straight. He weaned himself on 15 February 1991 when he weighed 36kg. He was brought into a feeding pen so that the daily intake could be recorded in April 1991 and he was castrated in May 1991. (This treatment is necessary as bottle fed red deer stags are unmanageably aggressive for most of the year, thus obviating the advantages of inducing tameness.) At the time of castration at six months of age a slight bend was noted in the nose. There were no signs of injury to the face or head. His nose gradually bent further from May to December while he remained indoors. In December he weighed 95kg - very well-grown for a yearling castrate male. During his second winter, he was again indoors on a trial

where food intake was recorded. The bend of his nose has not noticeably worsened since October 1992, which may reflect skeletal maturity. On 15 February of this year (1993) he weighed 122kg, which was a little lighter than the group average (154.9±20.6; Means±s.d., n=25).

The stag is well-grown, has no signs of ill-health, no problems eating, is not ostracised by his peers and has no behavioural abnormalities. He was and is a very quite animal. Part of our studies involves frequent blood sampling; no biochemical profile from him has appeared abnormal, even during the period of maximum nose bending. It has not proved possible to determine whether the condition is primarily due to undergrowth of one side, overgrowth of the other, or both. No other animal among his peers has shown any tendency towards this effect.

The twist in the tail? Our stag's nose bends to the left; in all recorded instances from the Northern Hemisphere the bend is to the right! This includes a caribou illustrated by Banfield (1961) as well as those mentioned by MacNally and Hettler. Mere coincidence? Possibly. Yet Goss (1980) has published an account of antler asymmetries in brow tine dominance in *Rangifer* from Northern and Southern Hemispheres. In reindeer the brow tine is a prominent palmate projection which normally only develops on one antler, the other being a simple

narrow tine. In *Rangifer* in the Northern Hemisphere the majority of deer had the left tine enlarged but in Norwegian reindeer from South Georgia in the Southern Hemisphere the greater proportion had the right tine enlarged. Davis (1982) argued that this presented evidence that geophysical forces operated on antler growth. While our nose bending deer appears opposite in effect to the antler asymmetry there is nonetheless a dichotomy in effect between the two hemispheres.

In fact the powerful forces of Coriolis predict a deflection to the right in the Northern Hemisphere and to the left in the Southern Hemisphere (Holmes, 1964). So our bent-nosed obeys the "rules" whereas the reindeer antler asymmetry does not appear to!

This case history in no way explains why bent noses occur in deer. It tends to suggest that they may not be birth defects nor caused by poor nutrition. As our stags are fed a well-balanced diet which includes adequate minerals and vitamins, we do not believe that such an imbalance is responsible. The fact that both upper and lower jaws apparently bend together points to a development abnormality. The intriguing possibility that such an abnormality might be responsive to the forces of Coriolis adds interest to such a conclusion. Whether such abnormality is genetically based must remain a mystery as our castrate is doomed to celibacy for the remainder of his - hopefully long - life.



"Mr Buckle", alias red deer number 3, on Sunday, 27 February 1993.

### References

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