

**BACCALAURÉATS GÉNÉRAL ET TECHNOLOGIQUE**  
**SESSION 2013**

**ÉPREUVE SPÉCIFIQUE MENTION « SECTION EUROPÉENNE OU DE LANGUE ORIENTALE »**

Académies de Paris-Créteil-Versailles

**Binôme : Anglais / SVT**

Sujet n°30

**THEME 1 – A3: EVOLUTION**  
**Série S/ES/L**

**Shrinking<sup>1</sup> sheep 'defy' natural selection**

Sheep living on a remote island off the coast of Scotland have been shrinking for 20 years. Shorter winters caused by climate change may be responsible.

Soay sheep are a primitive breed of domestic sheep living free on the island of Hirta in the St Kilda archipelago. Over the last two decades, the average size of the sheep has been falling.

5 Scientists say milder<sup>2</sup> winters help smaller sheep to survive, resulting in this "paradoxical decrease in size".

Classic evolutionary theory would predict that wild sheep gradually get bigger, as the stronger, larger animals survive into adulthood and reproduce.

10 Scientists first began studying Soay sheep, on the island of Hirta in the St Kilda archipelago, in 1985.

Since then, the sheep have decreased in size by 5% - their legs getting steadily shorter and their body weight decreasing.

The lead researcher in the study, Tim Coulson from Imperial College London, said "The island is almost like a natural laboratory - there are only the sheep and the vegetation there," he said.

15 They found that the local environment had a stronger effect on the animals than the evolutionary pressure to grow larger.

"In the past, only the big, healthy sheep and large lambs that had piled on weight<sup>3</sup> in their first summer could survive the harsh winters on Hirta," said Professor Coulson.

20 Because of climate change, he explained, grass for food is now available for more months of the year on the island.

"Survival conditions are not so challenging - even the slower growing sheep have a chance of making it, and this means smaller individuals are becoming increasingly common in the population," he said.

25 The team also found that younger sheep tended to give birth to smaller lambs - a phenomenon they termed "the young mum effect". As for the future of the sheep, the team believes that they are still shrinking. But it's too early to say if, in 100 years, we will have chihuahuas herding<sup>4</sup> pocket-sized sheep!

Extract from BBC News, by Victoria Gill, Thursday, 2 July 2009

**Sum up this article and explain the main ideas using your scientific knowledge.**

<sup>1</sup>Shrinking: becoming smaller

<sup>2</sup>Milder: less harsh climate conditions

<sup>3</sup>To pile on weight: to accumulate fat

<sup>4</sup>Herding: number, group of animals