

## 3<sup>rd</sup> International Conference on **Biodiversity & Sustainable Energy Development**

June 24-26, 2014 Valencia Conference Centre, Valencia, Spain

### Hypobiosis in mammals and birds living in the cold climate

N G Solomonov<sup>1,2</sup>, A I Anufriev<sup>1,2</sup>, A P Isaev<sup>1,2</sup>, I M Okhlopov<sup>1,2</sup> and R A Kirillin<sup>1,2</sup>

<sup>1</sup>Russian academy of sciences, Russia

<sup>2</sup>Institute for Biological Problems of Cryolithozone, Russia

Under the extremely rigid cold climate in Yakutia one of the efficient adaptations of animals is economization of energy resources at the cost of decrease in metabolism rate (hypobiosis) in the winter time. Transition into hypobiotic state during the winter frosts has been recorded not only in hibernating mammals but in some ungulate species well-adapted to cold (moose, reindeer, musk-ox, Yakut horse and other aboriginal animals of the region) Metabolic rate decline in birds is typical for *Galliformes* actively using protective features of the snow cover. Hypobiosis in mammals and birds well-adapted to cold is exhibited in less motor activity, adaptive behavior, metabolic rate decline, their body temperature fall in the winter time. Animals in hypobiotic state produce biologically active substances that decrease rate of metabolism in homoitherm animals at injecting BAS into the body. In future some of them may be used as drugs. The presentation brings data on the metabolic rate and body temperature dynamics of North animals well-adapted to cold.

stershik@yandex.ru