There are many infection agents characteristic to various groups on species of animals in the natural harmony. The effects of these pathogenic infection agents only on definite species or group of species is a proof of the existence of hereditary resistance in the living organisms. This natural resistance is dependent on the structural formation, biological and physico-chemical characters of the organism of many species. This natural resistance, being inherited from parents by means of chromosomes, passes from generation to generation and is named hereditary resistance.

The natural resistance is divided into two groups:

a) Permanent and stable natural resistance: The case where natural or artificial infection is not possible.

b) Relative natural resistance: The case where natural or artificial infection becomes possible after eliminating the resistance, by various means of an organism with natural resistance.

The main causes that eliminate the natural resistance of the non-specific host are the following: poor nourishment, exhaustion, unusual cold, unusual heat, excessive bleeding or excessive artificial bleeding, change in the internal body temperature, diseases of the various organs, excessive water injection into the blood, irregular and bad nutrition with low quality nourishment, chronic poisoning, disfunction of the endocrin glands, psychic depression, extreme excitation, despair etc.

In this study our research was based on the resistance of tortoises, which are the poikiloterm animal species, under normal living conditions, at low temperature, and at unusual high temperatures against the dog ascarid, *Toxocara canis*, which causes “Visceral Larva Migrans” in the human organism.

Materials and Methods

32 tortoises, *Testudo graeca* L., were captured at “Sarayburnu”, a district of Istanbul, and brought our research department. These poikiloterm animals were at different ages and of various sizes.
The tortoises were divided into three groups:

Group one was put in the refrigerator, at \(-4^\circ\) C. Group two was placed in a glass terrarium at \(24-26^\circ\) C. Group three was placed in an incubator at \(37^\circ\) C.

These groups, each separately, were subjected to bio-immunological tests against *Toxocara canis* infection. The animals in group two and group three were supplied with plenty of nourishment and drinking water. *Toxocara canis* eggs were obtained from pup faeces and female worms were forced to drop out from infected dogs by using piperazine. Uterus portions of female worms were cut into fine pieces and the eggs were cultivated in 0.5% formalin water. It was kept at room temperature for embryo formation. The egg cultures were rinsed with water to remove formalin before being used in the infection tests. Before each infection test, eggs involved were counted and every species was infected with 2000–3000 embryonated eggs. The infected tortoises were killed on the 7th and 8th days by using Ether-Chloroform and were subjected to post-mortem examination. With the consideration of the migration routes of *Toxocara canis* larvae, the livers and lungs of the tortoises under examination were placed in 10% formalin for histo-pathological research. 2664 sections of the above mentioned organs were prepared by known histo-pathological methods and were stained with Hematoxylin-Eosin* after which detailed microscopic examinations were made.

**Conclusion**

1. Tortoises from test group one were infected with embryonated eggs of *Toxocara canis* and after that each of them was placed in separate wooden boxes in a refrigeratory adjusted to \(-4^\circ\) C. No nourishment and water was supplied since these poikiloterm animals were going to sleep due to their metabolism falling to minimum at low temperature. On the 7th and 8th days the species were killed and post mortem examinations were carried out. Larvae or cell reactions were not observed on the histopathological section prepared from the livers and lungs of the test species. These results could be predicted because at such a low temperature tortoises as well as larvae have minimum metabolism. Therefore we think that no immuno-biological relation is possible under these conditions.

2. 12 tortoises in the second test group were placed in glass terrariums at \(24-26^\circ\) C. These species were killed on the 7th and 8th day and were subjected to post-mortem examination. Histo-pathological sections were prepared from their livers and lungs and these sections were examined under microscope.

*Toxocara canis* larvae or larval sections, or any diffused or focal cell infiltrations were not observed on the livers and lungs of the tortoises in this test. As a result of our small scale immuno-biological test we see that the tortoises have quite permanent and stable natural immunity against *Toxocara canis* infection.

* Here we wish to express our gratitude to our laboratory technician Miss N. **Turan** who showed great enthusiasm in preparing the test sections and in doing other technical laboratory works.