EXPERIMENTS WITH HABROBRACON AND TRIBOLIUM ON BIOSATELLITE II¹⁾

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The most distinguishing genetic feature of *Habrobracon* is that, by virtue of the haploid males, the entire genome can be revealed in one or two generations. *Tribolium* offers threshold systems where small enhancing or antagonistic responses of the environment in association with radiation induce a large, easily detectable effect. Both genetic and somatic systems in *Habrobracon* and *Tribolium* were examined after the insects had been carried in Biosatellite II.

Under a field of radiation, space flight conditions were responsible for an enhancement of total dominant and recessive lethality in metaphase I oocytes and early prophase I oocytes of *Habrobracon*, as well as an enhancement of dominant lethality in oogonia of *Tribolium*. On the other hand, the irradiated oogonia of *Habrobracon* apparently showed much less damage than ground-based controls. The sperm of *Habrobracon* had an increased recessive lethal frequency in the unirradiated compartment; neither *Habrobracon* sperm nor *Tribolium* spermatogonia showed any change from the ground-based controls when irradiated.

The somatic studies of *Tribolium* disclosed an enhancing effect of space flight conditions and radiation when wing abnormalities of developing pupae were criterion. The life span of *Habrobracon* females carried on the Biosatellite was significantly longer than those that were in the ground-based control set-up.

REFERENCES

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