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**PROCEEDINGS OF THE
THIRTY-SEVENTH MEETING OF THE
ZOOLOGICAL SOCIETY OF ISRAEL**

HELD AT
BEN-GURION UNIVERSITY OF THE NEGEV
24 December 2000

PROGRAM

Greetings, Avishay Braverman, President of Ben-Gurion University of the Negev.
Greetings, Miriam Cohen, Dean of the Faculty of Natural Sciences, Ben-Gurion University of the Negev.
Greetings, Zeev Arad, Treasurer of the Zoological Society of Israel.

SCIENTIFIC SESSIONS

Presiding: Y. Ayal (Ben-Gurion University of the Negev), Y. Benayahu (Tel Aviv University), A. Bouskila (Ben-Gurion University of the Negev), T. Dayan (Tel Aviv University), A. A. Degen (Ben-Gurion University of the Negev), A. Haim (University of Haifa at Oranim), U. Motro (The Hebrew University of Jerusalem), U. Paz (Society for the Protection of Nature in Israel), A. Perevolotsky (Israel Nature and Natural Parks Protection Authority), and D. Salz (Ben-Gurion University of the Negev).

A plenary lecture on “Foraminifera of the Mediterranean continental shelf: The present is the key to the past” was given by C. Benjamini (Ben-Gurion University of the Negev).

GENERAL MEETING OF THE SOCIETY AND CLOSING CEREMONY

Board elected: Y. Ayal (Ben-Gurion University of the Negev), D. Golani (The Hebrew University of Jerusalem), O. Gur (University of Haifa at Oranim), A. Haim (University of Haifa at Oranim), M. Inbar (University of Haifa at Oranim), O. Manheim (Tel Aviv University), M. Motro (The Hebrew University of Jerusalem), Y. Shkedy (Nature and Natural Parks Protection Authority), and I. Tsurim (Ben-Gurion University of the Negev).

The Michael Costa Prize for the best Ph.D. student paper was awarded to G. Stav (Ben-Gurion University of the Negev) for his presentation “Predation-risk effects on two temporary-pool species (*Bufo viridis* and *Culiseta longiareolata*).” The Gidy Zakai Memorial Prize for the best M.Sc. student paper was awarded to S. Perkol (Tel Aviv University) for her presentation “Comparison of coral communities between artificial and natural reefs in Elat (Red Sea).” The prize for the best poster presentation was

eastern Mediterranean continental shelf. Our group is engaged in an effort to understand current processes operating in the eastern Mediterranean, to examine the sedimentary record left behind, and to trace this record backwards in geological time to reveal temporal changes. Approximately 350 foraminiferal species have been identified, with about a third most probably representing new species. They belong to two foraminiferal provinces: a southern one of low diversity, dominated by nutrient-rich Nilotic sediments, and a northern one dominated by a carbonate-rich oligotrophic system with an extremely diverse fauna including symbiont-bearing epiphytes more typical of tropical coasts. Migrants from the subtropical Atlantic or recent Lessepsian arrivals from the Suez Canal have also been identified. These provinces have not been temporally stable, but expanded and contracted considerably over the studied period. These preliminary results promise a considerable enrichment of our understanding of the post-Messinian history of the eastern Mediterranean region.

The Golan Heights gazelle management program: Uncovering mechanisms, inspecting assumptions, and predicting future trends through simulations

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Since the implementation of the “Wild-animal protection act” in 1967, the population of the mountain gazelle (*Gazella gazella*) in the Golan Heights has grown from under 500 to over 5,000 individuals in 1985. This increase has created two major conservation and management problems: extensive damage to agriculture, and epidemiological problems due to the suspected role of the gazelles as a reservoir of foot-and-mouth disease. As a consequence, a culling program was devised, based on the estimated carrying capacity of the Golan Heights and the estimated population size in which disease eruption is limited. We have used a simulation model to explore the importance of several biological parameters and the consequences of various environmental scenarios under the imposed hunting regime. Our analyses suggest that the gazelle population size is not likely to be limited by intraspecific competition, and that the population-size estimation method used by the Israel Nature and National Parks Protection Authority is reliable. We found that during the years 1985–1992, the constant Leslie matrix and the number of legally hunted gazelles were adequate for a realistic description of the population dynamics. However, from 1992 we found it necessary to include an additional factor, the density-independent mortality in the young age groups (newborns to 3-year-olds). By using our model, we achieved a high fit (97%) between the virtual gazelle population and the actual one. Our model produced predictions regarding the recruitment rate and the male/female ratio of newborns. Recently acquired information was found to support some of the predictions of our model, while other predictions remain to be tested in the field.

Oviposition site selection by the mosquito, *Culiseta longiareolata*, in response to chemical detection of the predator *Notonecta maculata*

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The ability of a female to avoid ovipositing where risk of progeny predation is high should be favored by natural selection. In two outdoor pool experiments, we tested the oviposition responses

of two dipterans which have similar life-cycle characteristics, but differ in their vulnerability to the heteropteran predator *Notonecta maculata*: a mosquito, *Culiseta longiareolata*, whose larvae are highly vulnerable to the predator, and a midge, *Chironomus* sp., whose larvae have very low vulnerability to this predator. The experiments clearly showed that *Culiseta*, but not *Chironomus*, strongly avoid ovipositing in pools containing the predator. We further showed that *Culiseta* oviposition avoidance was achieved through a chemical cue from the predator. Under the conditions of our experiment, this chemical showed sufficient activity to repel *Culiseta* for about nine days. We are currently assessing how such a chemical, once identified, and if amenable to commercial production, may affect populations of mosquitoes if applied to natural breeding sites.

Resource partitioning in adults and juveniles of the lizard *Acanthodactylus boskianus*

R. BOOCHNIK. *Department of Life Sciences, Ben-Gurion University of the Negev, Beer Sheva 84105, Israel*

Species in the same habitat minimize competition by niche segregation. Similar to niche separation between species, niche separation between adult and juveniles of the same species is common. Niche separation can involve (1) habitat or microhabitat selection, (2) food type or size, (3) time partitioning, or (4) foraging mode. My goal was to find whether any of these mechanisms apply to adults and juveniles of *Acanthodactylus boskianus* lizards. I conducted 20-min. observations on *A. boskianus* in the Rotem Plain in the Negev. I recorded activity-time budget and type of prey. At the end of the observation the lizards were captured and marked. I recorded the microhabitat in which each lizard was first spotted, and the temperature of the air 1 cm from the ground. During the study, 46 full observations were made. Analysis of the results revealed that the age groups partition the resources through habitat selection, food type, and foraging mode. Juveniles prefer open spaces; adults prefer the vicinity of shrubs. Mean motion duration of juveniles is shorter than that of adults, and juveniles consume smaller prey than adults. No time partitioning was found. The causes for the partitionings may include processes other than competition. I observed an adult cannibalizing a juvenile; this may cause the juveniles to avoid the vicinity of shrubs, which are frequented by adults. Short motion duration may assist the juveniles to avoid visual predators.

When to flee from an approaching predator? Experiments and predictions from a mathematical model

A. BOUSKILA. *Department of Life Sciences, Ben-Gurion University of the Negev, Beer Sheva 84105, Israel*

A basking reptile faced with an approaching predator needs to decide when to run for shelter. A simple model based on the reduced running ability of ectotherms at low body temperatures suggests that cold reptiles will flee from predators at greater distances. Although some studies confirmed this hypothesis, reptiles that were investigated in other studies showed an opposite behavior: at low body temperatures they could be approached more readily than warm reptiles. Clearly, the effect of temperature on the performance of all reptiles should be identical, but the discrepancy between the opposite results remained unresolved in the literature. To address this problem, I experimented with one species of lizard (*Laudakia stellio*) that was approached by a trained kestrel in semi-natural enclosures. The lizards were tested at different body temperatures and at different distances from shelter. At cold temperatures, lizards with a nearby shelter allowed the kestrel to approach more closely than either cold lizards with far-away shelters or warm lizards. As in previous studies, some of the experimental results did not agree with the predictions of the simple model. A new model, based on decision theory, was formulated by including