Lab report example college

Return to the Lab Manual Master page Example of a poorly written laboratory report (single- to save paper; your should be double-left space for commenting) Ontogenetic Color Change and Mating Hints Largus Californicus (Hemiptera: Largidae) Carey Booth Box 123 Biology 102 February 2 1995 Lab Instructor: Ne Knightd Lab Day: Friday Abstract Ontogenetic Color Change for Sexual Puberty May Be Useful for Some Organisms Mate. Largus californicus persons undergo two ontogenetic color changes. The first instars are bright red, from the second to the fifth instars are shiny blue-black, and adults are black with orange marks. Adult male mating behaviour has shown that discolouration from fifth-year to adult age can allow men to discriminate against nymphs and adults. Males install adults and persist if they attach a woman and quickly release if they install another man. Men have never been seen to mount nymphs. Women's color patterns were changed, and men's copoculation tests were timely to determine whether the color model was used by men in mating solutions. The zero hypothesis that the back color pattern does not have a significant effect on male mating behaviour could not be excluded, so the value of the disco from nymph to adult must be sought elsewhere. Introduction to Ontogenetic color change during sexual maturation has been shown to be beneficial to fish (Fricke 1980), reptiles (Werner, 1978), and birds (Lyon and Montgomerie, 1986). In general, dull-colored minors avoid the risk of predatory and harassment when breeding men, while sexually mature individuals use bright colors to promote their readiness to mate (Booth, 1990a). In insects, mating cues are often chemical rather than visual (Jacobson, 1972), but there are some exceptions. Tiurnal Lepidoptera, an adult color model, plays an important role in the initial stage of mating behavior (Graham et al., 1980). In holometabolous insects such as Lepidoptera, puberty is associated with dramatic morphological changes, so separating larvae and adults for mating tests is not difficult. Recognition of maturity is more severe in hemimetabolous insects, where late instars can resemble the size and shape of adults. The possibility that a change in some hemiptera ontogenetic colors may have developed as an indication of maturation was not experimentally investigated. The mating behavior of male Largus californicus suggests that men may use visual cues, perhaps without pheromone cues, to separate the fifth instars and adults for mating tests. The fifth instars are shiny blue-black and almost adult in size. Adults (both male and female) are black with orange walls around the thickened part of hemelytro and pronotity (Booth, 1990b). Although men have never been seen to mount nymphs, they other adults, and remains if they are mounted on women or release for a few seconds if they installed another man. Their exceptional courtesy behavior allows the observer to immediately determine the initiation of a mating event. This consists of men targeting a woman when he is about 1 cm away, quickly waving her antennae, jumping on the woman's back and excitedly pulling the woman's legs. Since their genitals do not connect immediately, it is possible to separate the pair until they actually mate. These bugs do not fly and are easily handled and painted, without significantly disturbing their normal behavior. The experiments were designed to determine whether men use color cues in their mating decision and whether their behavior could explain the significance of the genetic color change from the fifth instar to the adults. A zero hypothesis has been tested that the back color pattern does not have a significant effect on male mating behaviour. The Materials and Methods Experiment was conducted outdoors at the Main Campus Reserve at the University of California, Santa Barbara on January 31, 1988. Errors were collected from the reserve on the morning of the test day. Tests were carried out when the errors were usually active (1030 to 1430 hours) and the control tests were carried out between experimental tests to ensure that daytime, temperature, turbidity and other environmental variables were approximately the same between the experiment and the control. Acrylic black paint and clear finish were used for each processing. The first treatment was black paint and a clear finish on the woman's ventral surface to control the smell of paint, without changing the pattern of black and orange on her back. The second treatment was a clear finish on the back control to cover the back surface, which can reduce any odor emitted or otherwise affect a woman's behavior. The third treatment was black paint on the back to mimic the color of the fifth instars. The three procedures will be called normal, clear and black for shortness. One woman was used to treat other aspects of the female attractiveness constant (size, shape, smell) for all three treatments. The procedure for submitting three treatments was necessarily the same for all men, since one woman in each experiment could only have black paint added after routine and explicit treatment. This design allows you to re-analyze the dispersion, because each man is tested with the same woman in three different conditions of paint. After each picture, the woman was placed in a transparent plastic box of 9 x 7 x 3 cm. The men were kept separately in marked plastic petri dishes. Each man was introduced one by one into the box fur furned from the woman. It was removed when he installed the woman or after an arbitraryly selected 270-second time passed, whichever happened earlier. The time was recorded for installation or 270 seconds (without holder). The couple were separated before their genitals joined so that no actual mating occurred. After all 15 was tested, the woman was stained for another treatment, and the men were tested in the same order. In order to control the possibility of men struggling in the second or third study, a similar number of different males have been tested three times, each of whom has one untreated female; i.e. there was no change in women between tests. The tests were altered between experimental and male control throughout the day of the test. In total, two females (one experimental and one control) and 29 males (15 experimental and 14 controls) were used. Statistical analysis was performed using the StatView program on the Macintosh microcomputer. AnovAs was used to check the differences in time between the three treatments and between the three control studies. Results No significant differences were found between the three treatments or between three control studies based on repeated measures ANOVA (Table 1). Men mounted black painted women as easily as women with a typical black and orange pattern. There was a slight, but not significant, increase in the men's average time to mount black treatment compared to normal and clear treatment (Figure 1). The 95% confidence interval was also higher for black treatment. The first control study was slightly higher, but not very different, in male average time to mount compared to the second and third tests (Figure 2). The mean time to install was less than three control tests in men than three experimental therapies. Since the maximum time men were allowed to stay in the box without fitting the woman was chosen arbitrarily, one case where a man did not connect a woman in 270 seconds was able to bias the results (Table 1). After separating the installation time for men who were unable to install, the results did not differ qualitatively from the above mentioned: no significant differences were found. Discussion Using one woman for all three color procedures, any non-color aspects of the attractiveness of women were considered constant. Since the zero hypothesis (that men's time for installation is not significantly affected by a woman's color) was not ruled out, men obviously used those other features in search of a friend. Male behaviour when installing other adults (male or female) rather than nymphs can mean pheromone differences between nymphs and adults, but not between adult males and females. Men quickly release other men as soon as they are in contact, so chemical cues transmitted by touch or other near-range signals (e.g. sound) can be used to distinguish men from women. There are small differences in shape between nymphs and adults (nymphs are more spherical) that men could use in mating decisions. Other experiments are necessary to determine the nature of communication between adults and between adults and nymphs. Among hemipterans, several species use pheromones as Cues. Southern green stinking bugs men (Nezara viridula) release pheromone, which attracts women, men, late-stage nymph and parasinoid (Aldrich et al., 1987). Dysdercus cingulatus and Pyrrhocoris apterus females also produce substances attractive to men (Osmani and Naidu, 1967; Zdarek, 1970). Since these last two species are located in the same superfamily (Pyrrhocoroidea) as L. californicus, it is possible that L. californicus females also produce pheromone, which is attractive to men. However, several species of the Largidae family, including L. cinctus (a close relative of L. californicus), have minimal development of the evaporation area of the metathoracic odor gland (Schaefer, 1972), so their use of pheromone connection may be limited. The use of pheromones does not exclude the possibility that visual cues may also be important. Links Aldrich, J.R., J.E. Oliver, W.R. Lusby, J.P. Kochansky and J.A. Lockwood. 1987. The cosmoter pest Pheromone strain Nezara viridula (Heteroptera: Pentatomidae). J. Exp. Zool. 244: 171-175. Cab, C. L. 1990a. Evolutionary significance of the genetic discolouration of animals. Biol. J. Linn. Soc 40: 125-163. Cab, C. L. 1990b. Largus californicus biology (Hemiptera: Largidae). Southwest Naturalist 35: 15-22. Fricke, H. W. 1980. Juvenile and adult color patterns and coexistence territorial coral reef fish Pomacanthus emperor. Mar. Ecol. 1: 133-141. Graham, S.M., W.B. Watt and L. F. Gall. 1980. Distribution of metabolic resources compared to mating attractiveness: Adaptive pressure Inch for butterfly alba polymorphism. Natl. Acad. Sci. 77: 3615-3619. James, M. 1972. Insect sex pheromones. Academic Press, New York. Lyon, B.E. and R.D. Montgomerie. 1986. Delayed maturation of feathers for passers-by: reliable signal of subordinate men? Evolution 40: 605-615. Osmani, Z. and M.B. Naidu. 1967. Evidence of sex attractor women Dysdercus cingulatus Fabr. Indian J. Exp. Biol. 5: 51. Schaefer, C. W. 1972. The degree of development of the smell of metatarctic-gland in the trichophore Heteroptera (Hemiptera). Ann. Entomol. Soc. 65 h: 810-821. Werner, D. I. 1978. For tropidurus delanonis biology, Baur (Iguanidae). Mr Tierpsychol. 47: 337-395. Zdarek, J. 1970. Mating behavior in error, Pyrrhocoris apterus L. (Heteroptera): ontogenia and control of its environment. Behavior 37: 253-268. Table 1: Reuse ANOVA men time to install women (in seconds). Treatment or study number of men average timea ± SEMb number of non-stands ANOVA between treatment Experimentf Normal Transparent Black 43.9 ± 10.9 35.4 ± 6.1 64.7 ± 20.5 1.42 2.28 0.26 Controlg Trial 1 Trial 2 Trial 3 30.4 ± 7.2 19.0 ± 3.8 19.6 ± 5.4 1.34 2, 26 0.28 Men's copulatory tests were timed from entry into the female container. b SEM = standard median c F error = F statistics d df = numerator degrees of freedom, denominator e P = probability value f Each male largus californicus was the same female under three different conditions of paint. Black and transparent paint on the back = Normal treatment. Transparent paint on the back = Clear processing. Black paint on the back - a black treatment that mimics the color of the fifth instar larva. g Different males were studied three times with one untreated woman = Control studies 1-3. Figure 1: Average male installation time (sec) with 95% confidence intervals in three experimental conditions. Each largus californicus man was tested for time to mount (trying to climb) with the same woman in three different paint conditions. Normal = Black and transparent paint on the back to control the smell of paint. Clear = Transparent paint on the back to control the coating of the back surface. Black = Black paint on the back to imitate the color of the fifth instar larva. Figure 2: Average male installation time (sec) with 95% confidence intervals for three control tests. Different Largus californicus men were tested for time to mount (trying co-climbing) three times each with one untreated female to control the presentation order of experimental therapies. Treatment.