First Report on Voracity and Feeding Preference of Predatory Beetle, *Thalassa montezumae* (Coleoptera: Coccinellidae) on Croton Scale, *Phalacrococcus howertoni* (Hemiptera: Coccidae)

Netalie Francis 1, Lambert H. B. Kanga 1,* , Catharine M. Mannion 2, Muhammad Haseeb 1, Anthony Ananga 1 and Jesusa Crisostomo Legaspi 3

1 Center for Biological Control, College of Agriculture and Food Sciences, Florida A&M University, 308 South Perry-Paige Bldg, 1740 South Martin Luther King Blvd, Tallahassee, FL 32307, USA; neason232@gmail.com (N.F.); muhammad.haseeb@famu.edu (M.H.); anthony.ananga@famu.edu (A.A.)
2 Tropical Research and Education Center, University of Florida/IFAS, 18905 SW 280 Street, Homestead, FL 33031, USA; cmannion@ufl.edu
3 United States Department of Agriculture, Agricultural Research Service, Center for Medical, Agricultural and Veterinary Entomology, 6383 Mahan Drive, Tallahassee, FL 32308, USA; jesusa.legaspi@usda.gov

* Correspondence: lambert.kanga@famu.edu; Tel.: +(850)-412-7062

Abstract: The croton scale *Phalacrococcus howertoni* Hodges & Hodgson gen. nov., sp. nov. (Hemiptera: Coccidae), was first found in Florida, USA. This scale has become a pest because of its high reproductive rate and production of sooty mold. Here, we evaluated predation potential of the predatory beetle, *Thalassa montezumae* Mulsant (Coleoptera: Coccinellidae), as a biological control agent. To our knowledge, this is the first study of predation by *T. montezumae* on *P. howertoni*. Results of our studies showed that the predation by 4th instar *T. montezumae* was higher on 2nd stage nymphs than on 3rd stage nymphs *P. howertoni*; predation on adults was lowest. Mean consumption by adult *T. montezumae* was highest on 2nd stage nymphs followed by 3rd stage nymphs, and adult *P. howertoni*. There were no significant differences between male and female adult *T. montezumae* in the prey first visited when offered a choice of 2nd or 3rd instar nymphs, or adults of *P. howertoni*. Thus, the levels of acceptance did not vary significantly between stages of prey visited by the males and females. Females chose prey faster than males and used less energy to search for food. Egg fecundity did not vary among female beetles fed with different stages of croton scales. Should *P. howertoni* become a major pest, *T. montezumae* could be used as a biological control agent within a biologically based integrated pest management program.

Keywords: croton scale; predation; fecundity; prey preference; pattern of movement; egg hatch

1. Introduction

Soft scale insects are serious plant pests and are often small and highly cryptic. These pests are economically important in both agricultural and landscape settings. A new species of soft scale, *Phalacrococcus howertoni* Hodges and Hodgson (Hemiptera: Coccidae), was first reported in South Florida in 2008 [1]. This pest species is particularly problematic on croton plants in nursery production because crotons (*Codiaeum variegatum*) are widely used in south Florida landscapes. Commonly called the croton scale, this species has been reported to feed on more than 72 host plants [1]. Due to its polyphagous nature and high reproductive ability, it is potentially a serious pest of numerous tropical and subtropical ornamental plants, fruit trees and buttonwood, an environmentally important mangrove tree [2]. The plants of primary concern are croton and gumbo limbo (*Bursera simaruba*) in South Florida because they appear to be the preferred hosts of this pest [3].

*Phalacrococcus howertoni* is a phloem-sucking insect that produces excessive honeydew. The buildup of honeydew secreted by the croton scale provides an excellent growing
substrate for the growth of sooty mold. Extensive sooty mold growth on the leaves can potentially inhibit photosynthesis [1]. Since its initial discovery, _P. howertoni_ has become well established and is continuing to spread throughout the state of Florida.

Currently, chemical control is considered one of the most effective but temporary methods to manage this pest in agriculture and the landscape [3]. Heavy reliance on insecticides may potentially lead to the development of resistance, and insecticides may negatively impact beneficial organisms and the environment [3].

Biological control strategies are important elements in integrated pest management (IPM) in preventing pest populations from reaching its economic injury level [4] [5–10]. Natural enemies have the potential to lower croton scale populations in the landscape. Several natural enemies have been identified that feed on croton scale. Among them is _Metaphycus flavus_ (Howard) (Hymenoptera: Encyrtidae), a common parasitoid of soft scale insects [3]. Numerous predators on croton scale include ladybird beetles, lacewings, spiders, caterpillars and others that feed on various pests of economic importance [11]. In south Florida, the list of predators of croton scale includes _Cryptolaemus montrouzieri_ Mulsant (Coleoptera: Coccinellidae) [12], _Thalassa montezumae_ (Coleoptera: Coccinellidae) and _Laetilia coccidivora_ (Comstock) (Lepidoptera: Pyralidae) [3]. Surveys conducted in 2014 in south Florida found _T. montezumae_ and _L. coccidivora_ commonly feeding on croton scale, of which _T. montezumae_ appeared to be predominant. _Thalassa montezumae_ is known to attack and reduce scale populations [12]; however, the biological control potential of _T. montezumae_ for use against _P. howertoni_ has never been studied [3].

_Thalassa montezumae_ developed from egg to adult in 34 ± 0.74 days under laboratory conditions of 27 ± 2 °C, RH of 60% and a photoperiod of 11:13 h L:D on a diet of _P. howertoni_. The mean duration of each stage was 8.2, 4.7, 2.8, 2.8, 6.3 and 9.3 days for eggs, 1st, 2nd, 3rd, 4th instars and pupae, respectively. Females laid an average of 274.2 ± 13.93 eggs. The sex ratio of adults was approximately 1:1. Adults and larvae fed on all stages of _P. howertoni_ [13].

Assessing the voracity of a predator can help determine the potential of that predator to maintain the pest density at a low level [14]. Nutritional requirements of a predator vary with the stage of development, behavior and biology [15], and the suitability of the prey can ultimately affect the overall growth, reproduction and fecundity of its predator. Evaluating the impact of a prey’s developmental stage on feeding and reproduction of _T. montezumae_ may provide insights in assessing its potential as a biological control agent.

The objective of this study was to investigate the feeding by _T. montezumae_ on different life stages of _P. howertoni_. We wanted to determine if beetles preferred a specific stage of scale and whether there was any difference in fecundity and survival of beetles feeding on different stages. We also compared feeding habits between male and female as well as fecundity in _T. montezumae_. The findings should provide useful information on the use of _T. montezumae_ as a biological control agent for _P. howertoni_ in an integrated pest management strategy.

2. Materials and Methods
2.1. Collection and Rearing of Phalacrocorax howertoni

Croton plants (_Codiaeum variegatum_) were purchased in 6-inch pots from Sturon Nursery, Homestead, Florida. Plants were placed in BioQuip screened cages (40 × 54 × 38 cm and 76 × 76 × 23 cm) and held under greenhouse conditions at 27 ± 8 °C at the University of Florida Tropical Research and Education Center (UF-TREC), Homestead, FL. Infested cuttings with _P. howertoni_ were collected from croton and gumbo limbo plants in the landscape and were carefully examined for parasitoids and predators under a Wild M-8 Stereoscope (10× oculars) microscope. These infested cuttings were placed in rearing cages for two days for observation and removal of any other pests and parasitoids, before they were used to infest clean croton plants.
2.2. Collection and Rearing of *Thalassa montezumae*

Immature stages of *T. montezumae* were collected from croton and gumbo limbo plants located at UF-TREC. Colonies were reared and maintained on infested croton plants in cages under greenhouse conditions as described above. Pupae collected from these colonies were carefully examined for natural enemies under a microscope (wild M-8 Stereoscope 10× oculars). Selected pupae without parasites were placed individually in Petri dishes (90 × 10 mm) lined with filter paper and maintained in an incubator at 27 ± 2 °C, 65% RH and photoperiod of 11:13 h L:D. Once adults emerged, all stages of scale were provided to *T. montezumae* as food source.

2.3. Voracity of *Thalassa montezumae*

Newly emerged first instar beetles were selected from colonies reared under laboratory conditions in an incubator at a constant temperature of 27 ± 2 °C, RH of 60% and photoperiod of 11:13 h L:D. The laboratory colonies were monthly infused with field collected beetles. Preliminary laboratory data did not indicate any mortality of the croton scale maintained in Petri dishes lined with filter paper, similarly, *T. montezumae* is reared in Petri dishes with filter paper in an incubator. In experiments, a sample of 60 individuals were transferred with a camel hairbrush into individual Petri dishes (90 mm diam × 10 mm depth) lined with filter paper for no-choice assessment of consumption. Each beetle larva was fed one life stage (2nd nymph, 3rd instar nymph or female adult) of *P. howertoni*. There were 20 replicates of each life stage of *T. montezumae* (1st, 2nd, 3rd, 4th and adult) and each was provided with 10 scales per dish as a food source. The number of scales fed upon was recorded every 12 h after exposure. The experiments were repeated on five different days. Voracity of adult beetle was determined following the same procedure; however, the experiments with adult beetles ran up to 30 days. Unlike other life stage experiments, there were 16 adult beetles for 2nd instar croton scale, 13 adult beetles for 3rd instar croton scale and 15 adult beetles for adult scale at the end of the 30-day periods of the experiments.

2.4. Feeding Behavior and Preference of *Thalassa montezumae*

To compare the feeding behavior and preferences between male and females *T. montezumae*, 50 adult females and 50 males (all newly emerged and unmated beetles) were randomly selected from colonies reared in cages under greenhouse conditions as described above. Test beetles were starved for 24 h prior to experimentation, and they were individually placed in Petri dishes (150 mm diam × 25 mm depth) lined with filter paper and maintained in an incubator at a constant temperature of 27 ± 2 °C, RH of 60% and photoperiod of 11:13 h L:D. Each dish (replicate) contained one adult beetle and prey (ten 2nd instar, seven 3rd instar and five adult scales). Each beetle was placed in the morning in the center of the dish and continuously observed for the pattern of movement for one hour under laboratory conditions (room temperature approximately 24 °C ± 2 °C, 60% RH and 16:8 h L:D). The experiments were repeated on at least 7 different dates with the patterns of the beetle being monitored 16 times per day. The pattern of movement was categorized into 4 types: (1) contacted and stayed with first prey encountered; (2) moved from prey to prey; (3) walked around Petri dish without prey contact; and (4) went directly to prey. The behavior of *T. montezumae* was recorded for the first hour. After 24 h, the beetles were removed and the number and type of prey that had been fed upon was recorded.

2.5. Fecundity and Egg Viability of *Thalassa montezumae*

Fecundity was studied using a pair of newly emerged adults of *T. montezumae* confined in a Petri dish (90 mm diam × 10 mm depth) lined with filter paper in an incubator at constant temperature of 27 ± 2 °C, RH of 60%, and photoperiod of 11:13 h L:D. Pairs were fed a different growth stage of *P. howertoni* daily; 10 pairs were fed second nymphal instars, 10 pairs were fed third instars, and 10 pairs were fed adults. Beetles were observed in the morning every day for mating and oviposition. The filter paper was examined daily under a dissecting microscope to record the number of eggs deposited per female and percentage
of viable eggs. Monitoring for oviposition and mating continued for 30 days although oviposition ceased after approximately two and one-half weeks.

2.6. Statistical Analyses

Data on the dietary preference of males and females feeding on scales, the patterns of beetle movements and the fecundity of *T. montezumae* were subjected to ANOVA (PROC Mixed). The data were transformed to log (χ + 1) or arcsine when necessary to satisfy the assumption of normality before analysis. Tukey’s studentized range was used to compare sample means [16]. A significance level of 0.05 was used for all statistical tests.

3. Results and Discussion

3.1. Voracity of *Thalassa montezumae* at Each Life Stage

The average number of 2nd and 3rd instar nymphs of *P. howertoni* fed on by the 1st instar nymph of the predator, *T. montezumae* during the 5 day-periods of the experiments was significantly different (F = 7.21; df = 2,57; p = 0.0016) from that of adult female scales (Table 1). Similarly, 2nd instar nymph of the predator fed on significantly (F = 12.40; df = 2,47; p < 0.0001) more 2nd and 3rd instar scales than adult scales. There were significant differences for the 3rd instar of *T. montezumae* which fed on more 2nd instar scales than either 3rd instar or adult scales (F = 12.00; df = 2,44; p < 0.0001); the preference of the 4th instar nymph of the predator was similar (F = 8.96; df = 2,45; p < 0.0005) to that of the 3rd instar nymph. For the adult beetle, there were significant differences between life stages of scales fed on (F = 864.73; df = 1642,41; p < 0.0001). During the 30-day experimental periods, adult *T. montezumae* fed on more 2nd instar scale than on 3rd and adult scales. The voracity of different stages of the *T. montezumae* was probably affected by the characteristics of the prey. For example, 2nd instar scales are smaller and appear to be softer and easier to handle. Manners and Duff [17] reported this behavior in another ladybird, *C. montrourizieri* where adults and small larvae only feed on eggs and very small mealybugs or scale nymphs; and larger larvae feed on larger mealybugs or scales including adults. The general pattern of food consumption by nymphal stages of *T. montezumae* showed a gradual increase after each molt but declined as the fourth instar approached pupation.

Table 1. Feeding preferences (mean number prey ± SE) of instars of *T. montezumae* on different stages of *P. howertoni* under laboratory conditions.

| Life Stage of *P. howertoni* | Mean Number of Scales Consumed by *T. montezumae* | Adult *T. montezumae* |
|-----------------------------|-----------------------------------------------|-----------------------|
|                             | 1st Instar 2nd Instar 3rd Instar 4th Instar |                       |
| 2nd nymph                   | 6.45 ± 0.22 a 6.53 ± 0.42 a 12.72 ± 0.83 a 21.28 ± 1.47 a | 212.00 ± 2.48 a |
| 3rd nymph                   | 6.40 ± 0.15 a 6.13 ± 0.29 a 6.79 ± 1.11 b 14.36 ± 0.98 b | 162.69 ± 1.70 b |
| Adult female                | 5.50 ± 0.23 b 4.25 ± 0.38 b 6.88 ± 0.82 b 14.56 ± 0.82 b | 94.27 ± 1.76 c |

Means in the column are not significantly different if followed by the same letter [p > 0.05 Tukey Test] [16].

3.2. Feeding Behavior and Prey Preferences of Adult *Thalassa montezumae*

3.2.1. Feeding Choice

There was no significant difference between male and female adult *T. montezumae* in the prey first visited when offered a choice of 2nd instar nymphs (χ² = 1.19; df = 1; p = 0.27), 3rd instar nymphs (χ² = 0.00; df = 1; p = 1.00), or adults (χ² = 0.79; df = 1, p = 0.37) of *P. howertoni*. Thus, the levels of acceptance did not vary significantly between stages of prey visited by males and females (Table 2).
Table 2. Feeding of adult *T. montezumae* on different life stages of *P. howertoni* over 24 h.

| Gender of *T. montezumae* | Mean Number (± SE) Croton Scales Fed upon by Adult Beetles |
|---------------------------|----------------------------------------------------------|
|                           | 2nd Instar | 3rd Instar | Adult Scale |
| Male                      | 3.22 ± 0.15 a | 1.90 ± 0.14 a | 0.52 ± 0.04 a |
| Female                    | 3.52 ± 0.16 a | 1.90 ± 0.09 a | 0.54 ± 0.06 a |

Means in the column are not significantly different if followed by the same letter. [p > 0.05 Tukey Test] [16].

3.2.2. Patterns of Movement

There were significant differences in the pattern of movements of adult males (*F* = 12.3; *df* = 3,196; *p* < 0.0001) compared with adult females (*F* = 19.2; *df* = 3,196; *p* < 0.0001). Males showed a preference for pattern one (stayed with first prey they encountered) and females showed a preference for pattern four (immediately chose prey item). There were no significant differences in patterns two and three between females and males. Females immediately chose prey faster than males and appeared to use less energy to search for food (Figure 1).

3.3. Effect of Diet on Egg Hatch of *Thalassa montezumae*

There were no significant differences in egg hatch due to female prey diet of comparing 2nd or 3rd stage nymphs or adult scales (*F* = 2.14; *df* = 2,27; *p* = 0.14). The percentage of hatchability associated with the prey diet was 76.6% for 2nd instar, 79.2% for 3rd instar and 84.4% for adult (Table 3). Clausen [18] indicated that the number of eggs laid by coccinellids varies substantially between species. Female *T. montezumae* laid an average of 274.2 ± 13.93 eggs while 500 eggs and 856 eggs were laid by *C. montrouzieri* and *Chilocorus schoediei* Mulsant, respectively [19]. Jayanthi et al. [20] reported that fecundity of *C. montrouzieri* was found to be linked to the adult female’s food consumption with a highly significant positive correlation to consumption over the 3 days prior to oviposition. Thus, the selection for high food consumption in the nymphal stages of *C. montrouzieri* results on adult females that lay large quantities of eggs.
Table 3. Percentage egg hatch for T. montezumae fed different life stages of P. howertoni.

| Life Stage of P. howertoni | N  | Eggs Laid (Mean ± SE) | Eggs Hatched | % Hatched |
|---------------------------|----|----------------------|--------------|-----------|
| 2nd Instar                | 10 | 283.8 ± 14.7 a       | 217.6 ± 14.8 a | 76.6 %    |
| 3rd Instar                | 10 | 289.9 ± 7.8 a        | 229.6 ± 11.1 a | 79.2 %    |
| Adult                     | 10 | 281.8 ± 7.1 a        | 237.8 ± 13.1 a | 84.4 %    |

Means in the column are not significantly different if followed by the same letter [p > 0.05]. N = number of pairs of adults of T. montezumae.

In applying biological controls for the croton scale P. howertoni, methods used here for rearing T. montezumae could be applied on a larger scale to augment natural enemies. Further, data can be useful in understanding the movement of P. howertoni in the landscape. Females were larger than males, but there was no significant difference between males and females when choosing a stage of prey. The second instar nymph was the stage of P. howertoni fed upon most by all stages of T. montezumae, and the stage of scale fed upon by adults in experiments did not significantly affect female fecundity.

4. Conclusions

A new species of croton scale, P. howertoni, has been reported feeding on more than 72 host plants. This pest species is of great concern for nursery production of croton plants, widely used in south Florida landscapes. In this study, we assessed selected biological parameters of the coccinellid, T. montezumae, for use as a biological control agent of P. howertoni. Our results indicated that oviposition by T. montezumae when feeding in three life stages (2nd, 3rd and adult) of the scale ranges from 281.8 to 289.9 eggs in three weeks and fecundity ranges from 76.6% to 84.4%. The life stage of scale fed upon by T. montezumae did not significantly affect female fecundity. Although female T. montezumae were larger than males, there were no significant differences between males and females when choosing a stage of prey. Our findings on the feeding behavior, fecundity and predation capability of T. montezumae suggest that this predator species is a potential biological control agent, should P. howertoni become an economically important pest. Thalassa montezumae will be a critical component in an integrated pest management program for the croton scale. However, additional research will be needed to develop T. montezumae as a successful biological control agent for the croton scale.

Author Contributions: Conceptualization, N.F., L.H.B.K., C.M.M., M.H. and A.A.; data curation, N.F. and L.H.B.K.; formal analysis, N.F. and L.H.B.K.; funding acquisition, L.H.B.K.; formal analysis, N.F. and L.H.B.K.; methodology, N.F., C.M.M. and A.A.; investigation, N.F.; project administration, N.F., L.H.B.K., C.M.M. and A.A.; resources, L.H.B.K., C.M.M., M.H. and A.A.; supervision, L.H.B.K., C.M.M. and A.A.; visualization, N.F.; writing—original draft, N.F.; writing—review and editing, N.F., L.H.B.K., C.M.M., M.H., A.A. and J.C.L. All authors have read and agreed to the published version of the manuscript.

Funding: We are grateful to the Center for Plant Health Science and Technology (CPHST), United States Department of Agriculture, Animal and Plant Health Inspection Services (USDA, APHIS) for the funding.

Acknowledgments: We thank Julius Eason (FAMU) for his assistance and support. Rebecca Tankenbaum, Sandy Koi, Juleysy Millerm and Muhammad Ahmed (University of Florida (UF-IFAS, Homestead, FL) assisted in various aspects of this research. Helpful reviews were provided by Rufina Wård (Alabama A&M Univ., ret.) and Jan Peters (FAMU-CAFS).

Conflicts of Interest: The authors declare no conflict of interest.
References

1. Hodges, G.S.; Hodgson, C.J. Phalacrococcus howertoni, a new genus and species of soft scale (Hemiptera: Coccidae) from Florida. *Fla. Entomol.* 2010, 93, 8–23. [CrossRef]

2. Amarasekare, K.G.; Mannion, C. Life history of an exotic soft scale insect *Phalacrococcus howertoni* (Hemiptera: Coccidae) found in Florida. *Fla. Entomol.* 2011, 94, 588–593. [CrossRef]

3. Mannion, C.M.; Hodges, G. Another New Scale in Florida. University of Florida. Scale Center. 2009. Available online: https://trec.ifas.ufl.edu/mannion/pdfs/Croton%20Scale%20Update%20March%202009.pdf (accessed on 15 March 2022).

4. Bale, J.S.; van Lenteren, J.C.; Bigler, F. Biological control and sustainable food production. *Phil. Trans. R. Soc. B.* 2008, 363, 761–776. [CrossRef] [PubMed]

5. Hoddle, M.S.; Van Driesche, R.G.; Sanderson, J.P. Biology and use of the whitefly parasitoid *Encarsia formosa*. *Ann. Rev. Entomol.* 1998, 43, 645–669. [CrossRef] [PubMed]

6. Bellows, T.S.; Fisher, T.W. *Handbook of Biological Control*; Academic Press: San Diego, CA, USA, 1999.

7. Michaud, J.P. Classical biological control: A critical review of recent programs against citrus pests in Florida. *Ann. Entomol. Soc. Am.* 2002, 95, 531–540. [CrossRef]

8. van Lenteren, J.C. Environmental risk assessment of exotic natural enemies used in inundative biological control. *BioControl* 2003, 48, 3–38. [CrossRef]

9. Hajek, A. Introduction of a fungus into North America for control of gypsy moth. In *Biological Control: A Global Perspective*; Vincent, C., Goettel, M.S., Lazarovits, G., Eds.; CAB International: Wallingford, CT, USA, 2007.

10. Fand, B.B.; Suroshe, S.S.; Gautam, R.D. Fortuitous biological control of insect pests and weeds: A critical review. *The Bioscan.* 2013, 8, 1–10.

11. Hodges, G. Pest Alert: A New Exotic Soft Scale Insect on Croton in South Florida (Hemiptera: Coccoidea: Coccidae) 2008. Available online: http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Plant-Industry-Publications/Pest-Alerts/Pest-Alert-Soft-Scale-Insect-on-Croton (accessed on 5 February 2022).

12. Mannion, C.M. Rugose Spiraling Whitefly (Previously Gumbo Limbo Spiraling Whitefly). In *A New Whitefly in South Florida*; Tropical Research and Education Center, University of Florida: Gainesville, FL, USA; Homestead: Moose, WY, USA, 2010; 5p.

13. Kanga, L.H.B.; Francis, N.; Mannion, C.; Haseeb, M. Biology and effects of selected pesticides on a predatory beetle, *Thalassa montezumae*, a potential biocontrol agent of croton scale *Phalacrococcus howertoni* in south Florida. In Proceedings of the 52nd CFCS (Caribbean Food Crops Society) Annual Meeting, Guadeloupe, France, 10–16 July 2016; pp. 38–41.

14. Sengonca, C.; Al-Zyoud, F.; Blaeser, P. Prey consumption by larval and adult stages of the entomophagous ladybird *Serangium parcesetosum* Sicard (Col., Coccinellidae) of the cotton whitefly, *Bemisia tabaci* (Genn.) (Hom., Aleyrodidae), at two different temperatures. *J. Pest Sci.* 2005, 8, 179–186. [CrossRef]

15. Jervis, M.A. (Ed.) *Insects as Natural Enemies: A Practical Perspective*; Springer: Dordrecht, The Netherlands, 2005.

16. SAS Institute, Inc. *SAS User’s Guide*; Version 9.1th ed; SAS Institute: Cary, NC, USA, 1996.

17. Manners, A.; Duff, J. Mealybugs. A Pest of a Different Scale. 2015. Available online: https://www.horticulture.com.au/globalassets/hort-innovation/resource-assets/ny11001-mealy-bugs.pdf (accessed on 12 March 2022).

18. Clausen, C.P. *Entomophagous Insects*; McGraw-Hill: New York, NY, USA; London, UK, 1940; 688 p.

19. Greathead, D.J.; Pope, R.D. Studies on biology of and taxonomy of some Chilocorus spp. (Cleoptera: Coccinellidae) preying on Aulacaspis spp. (Hemiptera: Diaspididae) in East Africa, with description of a new species. *Bull. Entomol. Res.* 1997, 67, 259–270. [CrossRef]

20. Jayanthi, P.D.K.; Sangeetha, P.; Verghese, A. Feeding and Fecundity in the Predator, *Cryptolaemus montrouzieri* Mulsant (Coleoptera: Coccinellidae). *J. Biol. Control* 2015, 29, 14. [CrossRef]