A Belated Obituary for Professor Ásgeir Jónas Thorsteinson (1917-1998)

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Preface

When I was a graduate student in the Department of Entomology at the University of Manitoba, Professor Thorsteinson, "Thor", was the Head of the Department, and a rather enigmatic and mythical character. Although I never took a course from him, he served on my PhD examining committee, so I had more contact with him than many other students in the Department at the time. My interactions with him were always unpredictable. Some days he seemed distracted, he always had a lot on his mind. Some days he would focus more fully on our discussion, or the question I had asked, and he would be thoughtful and insightful. One thing for certain, my interactions with him were always interesting.

In the summer of 1976, prior to Thor's retirement, he suffered a serious automobile accident, which delayed the family`s post-retirement plans to move to Vancouver. They eventually moved west, and he became disconnected from the entomological community

in Manitoba. I encountered him only once after that in the 1980's, at a meeting of the Western Forum, a collective of pest management specialists working out practical solutions to insect and plant disease problems. Thor and I sat down in the bar after an afternoon session for a beer; he was most interested in what had happened in the Department since he had left. He was particularly interested in the Canada Biting Fly Centre, a valuable component of the Department for about ten years. The Director of the CBFC was Dr. Mary Chance. Mary reverted to her maiden name at the time of her marriage to Manfred Jaeger. It just so happened that her maiden name was Galloway. From a distance, this caused Thor to think about the ramifications of this change, and he eventually asked me what had happened to my wife, Carol. When I explained the situation, we both had a good laugh. Cam Jay, a subsequent Head of Department was some years later visiting Vancouver with his wife, Doreen. They were driving through the city when Cam decided they should visit Thor, or at least call him while they were in the city. He had no idea about where Thor and his wife, Mildred, were living, so he turned into a strip mall where there was a telephone booth by the sidewalk. He jumped out of their vehicle and entered the telephone booth with the notion to look up Thor's contact information. As his fingers were walking up and down the pages of the directory, there was a gentle tap-tap-tap on the glass, and as he looked up, there was Thor smiling back at him. Talk about coincidence!

Several years ago, it occurred to me that I hadn't heard anything about Thor for many years. I searched obituaries and using various on-line search strategies and contacted entomologists around British Columbia to find out where he was or what had happened to him. It wasn't until Rob Currie forwarded Mildred's obituary to me that I was able to complete my quest. I contacted Thor's family via the funeral home, and his daughter, Julian, responded. From that point, the two of us worked together to compile the following obituary. (TDG)

Obituary

Thor was born 2 September, 1917 in Winnipeg. He attended high school in Winnipeg from 1931 to 1935, during which time he worked in the commercial fishery on Lake Winnipeg. He was valedictorian of his graduating class in 1935 before enrolling in Winnipeg Normal School to obtain his first class teacher certification. He taught public school at Old Fort School in 1937-1938. He was hired in the Department of Entomology at the University of Manitoba during the summers of 1939 and 1940, where he had enrolled in 1939; he received an Isbister Scholarship at the University of Manitoba, and the University Gold Medal in his graduating year, when he also served as Vice Stick and President of the fourth year class in 1940-1941. Upon graduation, he worked as an assistant cereal breeder in the Cereal Division at the Rust Research Laboratory on the University of Manitoba campus.

Thor's academic career was interrupted by WWII, and he served as a Lieutenant in the Canadian Army Infantry, Motor Division from 1942-1944. After the war, he pursued

graduate training in Entomology and entered a programme at Imperial College, University of London in 1945 with a two-year British Council Scholarship. He completed his Ph.D. in December, 1946, after which he returned to Canada to work for two years as an insect physiologist at the Forest Insect Laboratory in Sault Ste Marie, Ontario. He joined A.V. Mitchener in the Department of Entomology at the University of Manitoba in 1948 as an Assistant Professor. He was promoted to Associate Professor in 1953 and became Acting Chairman of the Department of Entomology in 1956 and Professor of Entomology and Chair in 1958. Thor supervised 21 graduate students from 1955 to1974 (1955 – W. Hanec; 1959 – D.L. Smith, M. Tauber; 1960 – R.A. Brust, D.P. Peschken; 1961 – G.K. Bracken, P.J. Proctor, J.A. Scott; 1962 – G.K. Bracken; 1963 – S. Chang; 1964 – N.R. Brandt, E.A.R. Liscombe, S.R. Loschiavo, W. Tostowaryk, F.L. Watters; 1965 – K.L.S. Harley; 1969 – A. Campbell, G.G. Wilson; 1972 – R.J.M. Trimble; 1973 – R.D. Wickstrom; 1974 – C.C. Christie), many of whom had long, successful careers in entomology. Thor stepped down as Head of the Department in 1976 and retired in August, 1977.

It's difficult to categorize Thor's research activities. He would have called himself an insect physiologist, specializing in host plant selection and interactions between herbivorous insects and plants. He and his collaborators published at least 40 refereed papers, spanning a considerable range of topics. Notable among these is his 1960 paper, "Host plant selection in phytophagous insects", which appeared in the Annual Review of Entomology. This paper was recognized as a Science Citation Classic, cited more than 300 times since it was published, and is still being cited in 2015. He and a number of post-doctoral researchers and graduate students have contributed significantly to the nature of insect-host plant relationships. Many of these studies involved important crop pests, such as diamondback moth, cabbage maggot, and the two-striped and lesser migratory grasshoppers.

Another well connected thread through Thor's research career was his interest in biting flies. This included mosquitoes, and the impact of various natural chemicals on growth and development for mosquito larvae. In later years, he interacted extensively with the City of Winnipeg personnel who were in charge of mosquito abatement activities. Thor's views were well entrenched and he was a frequent contributor to public hearings conducted by the City. He firmly believed that thermal fogging, the adulticide strategy at the time, was not effective and should be abandoned. Dr. Reiny Brust, one of the best known mosquito researchers in Canada, studied for his M.Sc. under Thor's supervision.

Another area related to biting flies arose from Thor's observations on behaviour of host-seeking horse flies. As the story goes, he watched horse flies accumulate inside his vehicle when he parked with the windows rolled down at the family cottage near Piney, Manitoba. This is certainly prime horse fly habitat, so there would have been no shortage of flies for study. As he wondered about what it was that attracted flies to enter his vehicle, he considered heat as a first hypothesis, given the higher temperature inside the car. This led him to conceive what he initially referred to as a heliothermal trap, a large

black target that he thought would absorb the sun's radiant energy and thus have a higher temperature. The trap for his target worked brilliantly, but as he later discovered through careful experimentation carried out by graduate students, Garth Bracken, Dieter Peschken and Wally Tostowaryk, along with departmental collaborator, Dr. Bill Hanec, it was the reflective nature of a shiny, black sphere that was most responsible for the attraction. This trap became universally known as the Manitoba Horse Fly Trap, and you can find horse fly workers the world over who use this trap, or one based on its principles, wherever horse flies are studied. His papers on the horse fly trap have been cited collectively more than 200 times. As an amazing testament to the effectiveness of the trap, TDG recorded an astounding average catch of 10,000 horse flies, per hour, one day at a study site near Whitemouth Lake, Manitoba.

It is unfortunate this summary was inadvertently delayed from the time of his death, 15 March, 1998. With this publication, we hope Thor's contributions to his field of research and to the University of Manitoba might be recognized.

Chronological List of Refereed Publications

Thorsteinson, A.J. 1953. The chemotactic responses that determine host specificity in an oligophagous insect (*Plutella maculipennis* (Curt.) Lepidoptera). Canadian Journal of Zoology 31: 52–72.

Thorsteinson, 1953. The role of host selection in the ecology of phytophagous insects. The Canadian Entomologist 85: 276-283.

Thorsteinson, A.J. 1954. The chemical sense in phytophagous insects. Redia Firenze 38: 369–374.

Thorsteinson, A.J. 1955. The experimental study of the chemotactic basis of host specificity in phytophagous insects. The Canadian Entomologist 87: 49–57.

Thorsteinson, A.J. 1958. Acceptability of plants for phytophagous insects. Proceedings of the 10th International Congress of Entomology Montreal 1956, Volume 2: 599–602.

Thorsteinson, A.J. 1958. The chemotactic influence of plant constituents on feeding by phytophagous insects. Entomologia Experimentalis et Applicata 1: 23–27.

Thorsteinson, A.J. 1958. The orientation behavior of horse flies and deer flies (Tabanidae: Diptera). I. The attractance of heat to tabanids. Entomologia Experimentalis et Applicata 1: 191–196.

Gupta, P.D., and A.J. Thorsteinson. 1960. Food plant relationships of the diamondback moth (*Plutella maculipennis* (Curt.)). I. Gustation and olfaction in relation to botanical specificity of the larva. Entomologia Experimentalis et Applicata 3: 241–250.

Gupta, P.D., and A.J. Thorsteinson. 1960. Food plant relationships of the diamondback moth (*Plutella maculipennis* (Curt.)). II. Sensory regulation of oviposition of the adult female. Entomologia Experimentalis et Applicata 3: 305–314.

Thorsteinson, A.J. 1960. Host selection in phytophagous insects. Annual Review of Entomology: 193–218.

Heidwig, H., and A.J. Thorsteinson. 1961. The influence of physical factors and host plant odour on the induction and termination of dispersal flights in *Sitona cylindricollis*. Entomologia Experimentalis et Applicata 4: 165–177.

Thorsteinson, A.J., and J.K. Nayar. 1962. Plant phospholipids in plants as feeding stimulants for grasshoppers. Proceedings of the Entomological Society of Manitoba 18: 40.

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Thorsteinson, A.J., and J.K. Nayar. 1963. Plant phospholipids as feeding stimulants for grasshoppers. Canadian Journal of Zoology 41: 931–935.

Thorsteinson, A.J., G.K. Bracken and W. Hanec. 1964. The Manitoba horse fly trap. The Canadian Entomologist 96: 166.

Quraishi, M.S., and A.J. Thorsteinson. 1965. Effect of synthetic "queen substance" and some related chemicals on immature stages of *Aedes aegypti*. Journal of Economic Entomology 58: 185–187.

Peschken, D., and A.J. Thorsteinson. 1965. Visual orientation of black flies (Simuliidae: Diptera) to colour, shape and movement of targets. Entomologia Experimentalis et Applicata 8: 282–288.

Bracken, G.K., and A.J. Thorsteinson. 1965. The orientation behavior of horse flies and deer flies (Tabanidae: Diptera). III. The use of traps in the study of orientation of tabanids in the field. Entomologia Experimentalis et Applicata 8: 189–192.

Bracken, G.K., and A.J. Thorsteinson. 1965. The orientation behavior of horse flies and deer flies (Tabanidae: Diptera). IV. The influence of some physical modifications of visual decoys on horse flies. Entomologia Experimentalis et Applicata 8: 314–318.

Quraishi, M.S., and A.J. Thorsteinson. 1965. Toxicity of some straight chain saturated fatty acids to house fly larvae. Journal of Economic Entomology 58: 400–402.

Thorsteinson, A.J. 1966. [Toxic] Effects on certain insects of some chemical constituents of plants and insects [insecticides]. Meded Rijksfac Landbouwwentenschappen Gent 31: 807–809.

Thorsteinson, A.J., G.K. Bracken and W. Tostowaryk. 1966. The orientation behavior of horse flies and deer flies (Tabanidae: Diptera). V. The influence of the number and the inclination of reflecting surfaces and attractiveness to tabanids of glossy black polyhedral. Canadian Journal of Zoology 44: 275–279.

Harley, K.L.S., and A.J. Thorsteinson. 1967. The influence of plant chemicals on the feeding behavior, development, and survival of the two-striped grasshopper, *Melanoplus bivittatus* (Say), Acrididae, Orthoptera. Canadian Journal of Zoology 45: 305–319.

Matsumoto, Y., and A.J. Thorsteinson. 1967. A simple method for rearing the onion maggot, *Hylemya antiqua* Meigen (Diptera: Anthomyiidae) in the laboratory. Applied Entomology and Zoology 2: 58–59.

Quraishi, M.S., and A.J. Thorsteinson. 1967. Toxicity of alkanes and alkenes to pre-imaginal stages of yellow-fever mosquito. Journal of Economic Entomology 60: 84–88.

Matsumoto, Y., and A.J. Thorsteinson. 1968. Effect of organic sulphur compounds on oviposition in onion maggot, *Hylemya antiqua* Meigen (Diptera: Anthomyiidae). Applied Entomology and Zoology 3: 5–12.

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Hillyer, R.J., and A.J. Thorsteinson. 1969. Influence of host plant or males on ovarian development or oviposition in diamondback moth *Plutella maculipennis* (Curt.). Canadian Journal of Zoology 47: 805–816.

Wilson, G.G., and A.J. Thorsteinson. 1969 (1970). The effects of food plants and food plant constituents on growth and mortality of the migratory grasshopper, *Melanoplus sanguinipes*, inoculated with *Nosema locustae*. Proceedings of the Entomological Society of Ontario 100: 237–238.

Saxena, K.N., and A.J. Thorsteinson. 1971. Effects of synthetic "queen substance" and analogues on survival, molting, and metamorphosis of *Aedes aegypti* Diptera: Culicidae. Journal of Economic Entomology 64: 287–291.

Hillyer, R.J., and A.J. Thorsteinson. 1971. Influence of host plant or males on programming of oviposition in diamondback moth (*Plutella maculipennis* (Curt.) Lepidoptera). Canadian Journal of Zoology 49: 983–990.

Krishna, S.S., and A.J. Thorsteinson. 1972. Ovarian development of *Melanoplus sanquinipes* (Fab.) (Acrididae: Orthoptera) in relation to utilization of water-soluble food proteins. Canadian Journal of Zoology 50: 1319–1324.

Miyazaki, S., and A.J. Thorsteinson. 1972. Metabolism of DDT by fresh water diatoms. Bulletin of Environmental Contamination and Toxicology 8: 81–83.

Trimble, R.M., and A.J. Thorsteinson. 1974. Habitat and seasonal distribution of *Aedes* mosquitoes at Pinawa, Manitoba as a rational basis for mosquito abatement. Centre for Settlement Studies, Research Reports, University of Manitoba 21: 1–32.

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First records of ensign wasps (Hymenoptera: Evaniidae) and their cockroach host (Blattodea: Blatellidae) in Manitoba

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Abstract – We provide the first record of Evaniidae in Manitoba with the discovery of *Hyptia harpyoides* Bradley and the first published record of its host, *Parcoblatta virginica* (Brunner von Wattenwyl), in the province.

Introduction

Ensign wasps (Hymenoptera: Evaniidae) are solitary egg predators of cockroach oothecae (Blattodea). There are 21 extant genera and 580 extant described species of Evaniidae, with the majority of diversity occurring in tropical regions (Yu *et al.* 2011; Mullins *et al.* 2012). There are 65 known species of *Hyptia* in the New World, only ten of which are recorded from North America including Mexico (Deans 2005). Species of *Hyptia* attack a wide variety of cockroaches across different subfamilies, but are common predators of saprophagous wood cockroaches in the genus *Parcoblatta* (Blattellinae).

Only two species of Evaniidae have been reported from Canada: *Hyptia harpyoides* Bradley and *Hyptia thoracica* (Blanchard) (Mullins *et al.* 2012). The known distribution of these two species is vague, with *H. thoracica* reported from Ontario and *H. harpyoides* only specified as collected in Canada (Deans 2005). Evaniids have never been recorded specifically from Manitoba, which is not surprising given that native cockroaches are rarely collected in this region (Vickery and Kevan 1985). Recent field trips to Whiteshell Provincial Park in Manitoba led to the discovery of two specimens of *H. harpyoides*. Additionally, one of the known hosts of this species, *Parcoblatta virginica* (Brunner von Wattenwyl), was subsequently discovered in the Wallis-Roughley Museum of Entomology at the University of Manitoba, which is also a new record for the province.