

George Harvey was remembered fondly by colleagues and students alike as a kind and caring gentleman. He was a dedicated, thoughtful scientist who was an enduring presence at the Great Lakes Forestry Centre. His 35 years of research covered a broad sweep of topics, ranging from taxonomy, insect physiology, and genetics, focused primarily on the spruce budworm (*Choristoneura fumiferana*). His work provided much of the foundation on which our current understanding of spruce budworm rests and continues to influence new generations of scientists.

As a boy, George was fascinated by the natural world and this passion stayed with him his entire life. His love of nature led him into a Biology program at the University of Western Ontario in 1946. During his summers, he worked as a member of a field crew at the Forest Insect Laboratory (now called the Great Lakes Forestry Centre), a brand new federal research laboratory in Sault Ste. Marie, Ontario. Together, the crew would conduct experiments on spruce budworm, a pest devastating the spruce and fir forests in eastern



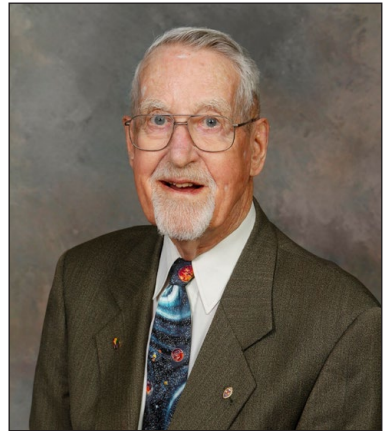
During his summers as an undergraduate, George (far left) worked on spruce budworm with the Federal Department of Agriculture out of Sault Ste. Marie

Canada. From 1945-1949 he returned each summer to the Forest Insect Laboratory, assisting with spruce budworm research in Chalk River (1945, 1947, 1948), Black Sturgeon Lake/ Eaglehead Lake (1946, 1949), and Lake Kindiogami (1949). As a student in 1945, George was one of the original staff hired at this new institution. Little did he know that he would eventually spend over 35 years of his life in pursuit of entomological questions in northern Ontario.

After completing an undergraduate degree at the University of Western Ontario, George stayed on to complete a MSc with Dr Anthony (Tony) Brown focusing on the effects of insecticides on insect respiration (Harvey 1950). Following his MSc, George continued his work on insect physiology at the University of Wisconsin-Madison with Dr Stanley Beck where he completed his PhD in 1953 (Harvey 1953). Even before defending his PhD, George was hired as a research scientist at the Forest Insect Laboratory in Sault Ste. Marie, ON, returning to the institution that gave him his first taste of entomology.

During these busy years as an academic, George married Roberta (Robin) in 1949 and embarked on 65 years together with the love of his life. They had their first child Edward (Ted) in 1951, followed by Constance (Connie, 1953), Susan (1956), and Paul (1958). When George accepted his position at “The Bug Lab” (as the lab was affectionately known), his family moved back to Ontario and set down roots.

George immediately translated his earlier entomological experience into a long and productive research career as a federal scientist. He focused his keen intellect on many aspects of spruce budworm biology. He described phenotypic variation in egg weight and diapause, both of which contribute to its survival in the northern boreal forest (Harvey 1957, 1983, 1985). His work on



George Thomas Harvey
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spruce budworm diapause, including the description of diapause-free phenotypes (Harvey 1957) and 2-year life cycles (Harvey 1961), shed light on natural variation in this widespread species. George recognized the importance of diapause, both in overwintering survival and as a diagnostic trait (Harvey 1967). He explored the environmental cues that triggered the expression of diapause phenotypes (Harvey 1958), as well as the genetic mechanisms that drove this expression (Harvey 1967). His exploration of the genetics and inheritance of complex phenotypic traits laid an important foundation for future studies on variation in spruce budworm. In fact, George was an early adopter of molecular techniques, seeing the potential for population genetics to help understand complex traits, population dynamics, and limits among species (Harvey 1996a, 1996b, 1997). His work was years ahead of the field and highlighted his innovative approach to science. George also explored budworm nutrition (Harvey 1974, 1975) which had directly contributed to the development of the spruce budworm diet (McMorran 1965) and the creation of spruce budworm laboratory colonies. Many colleagues remember George for his generosity; both with his time and ideas, and his name frequently appeared in the acknowledgement sections of publications produced by his peers. He hired numerous summer students during his years as a research scientist, sharing with them his passion and approach to science. Many of these students maintained contact with George well beyond their months of summer employment, which speaks of the positive impact he had on those around him.

Over his long life, George pursued many personal passions. His love of nature, which began during his childhood and led him into a career in entomology, also influenced his personal life. He was a charter member of the Sault Naturalists Club and supported the development of the Voyageur Trail along with his colleague Paul Syme. He was also an avid birdwatcher and gardener. He shared his passion for the outdoors with his family and friends, and there were many adventures in the woods and waters throughout Ontario. His grandchildren remember him for The Bug Barn, hikes to High Tops, visits to Lake Superior, and swims at camp, all the while sharing his love for the natural world.

Community service and leadership were two important elements in George's life. As a son of a United Church minister, George learned to lead by example, treating others with kindness and great empathy. He served anywhere there was need, often sharing his faith as a lay minister in the communities surrounding Sault Ste. Marie. He volunteered in leadership roles within the United Church's local, regional, and national organization and actively contributed to the national restructuring of the United Church of Canada, a 25-year-long process. George's community service also extended to Scouting, first as a Scout during his younger years and then as a Scout leader. He enjoyed sharing his love of nature and passion for outdoor pursuits with local youth. His involvement with the scouting organization expanded over time, culminating with his time as District Commissioner (1965-1970) and Associate Provincial Commissioner (1970-78). For these long years of dedicated service, George was presented with the Silver Acorn by the Lieutenant-Governor of Ontario in 1979.

George Harvey was a beloved spouse, father, grandfather and great grandfather. He was an excellent scientist who shared his love of the natural world broadly among his professional and personal spheres. He was fondly remembered and missed greatly by all those who knew him. In closing, we include a poem recited at George's retirement in 1989. This truly encapsulates the story of his life.



George receiving the Silver Acorn, the highest provincial award in the Scout organization, from Lieutenant-Governor Pauline McGibbon for his distinguished service to Scouting. [1979]

Poem read at George's retirement from the Great Lakes Forestry Centre in 1989
by Nancy Jondreau(?) and others

In days of yore, just after the war,
Upon St. Mary's northern shore,
A close-knit group of devoted young men
Vowed to fight bugs in forest and fen.

Their sword was science, stronger than steel,
And each young man was fired with zeal.
Armed with test tubes and microscopes,
They tackled their jobs with the highest of hopes.

An earnest young student from Western, George
Harvey,
Was fascinated by insect larvae.
In the spring of '45 he'd been sent
To work at Chalk River for the government.

In August he headed for the Sault
To join the entomology crew.
All of the lads were frightfully keen;
A more eager bunch you've never seen.

These stalwart souls began their career,
'Mid Stevenson screens and bottles of beer,
Out at the old insectary,
Where the rent was cheap and mosquitoes were free.

With dauntless courage, while swatting at bugs,
That were buzzing around their bearded mugs,
They set up weather stations with care.
And plucked tent caterpillars from their hair.

They cooked their own meals (or so we are told);
Their fall webworm pie was a joy to behold.
And at night they gathered round the campfire
To swap tales and choose the biggest liar.

The following summer, near Eagle Head Lake,
With young George Harvey in his wake,
Jim Fettes conducted an aerial spray
Against spruce budworm -- the first, they say.

A mixture of oil and DDT
Was liberally splattered on every tree.
George's job was to assess
How the budworm fared in this sticky mess.

The next three summers George did roam
Across the province, far from home.
Chalk River, Black Sturgeon and, for a break,
Another stint at Eagle Head Lake

Round about Christmas of '49
This Minister's son tried a brand new line.
He took the fair Robin as his lawful wife,
And savoured the joys of married life.

As his work at Western drew to a close,
George's stock as a scientist rose.
He rapidly gained a reputation
For measuring insect respiration.

In 1950, early one morn,
George headed for the alien corn.
At Madison he worked with Stan Beck,
Immersed in cockroaches up to his neck.

Poor Robin nearly went berserk
When George came home each night from work.
For out of his trouser cuffs so deep
Dozens of giant roaches would leap.

At last, having finished his PhD,
George returned to Sault Ste. Marie.
The Harvey clan now numbered three --
They'd started their own small family tree.

Over the years, George always tried
To ensure that his work was diversified.
He studied the budworm diapause
And sought to determine the ultimate cause

Of variations in mean egg weight,
And how they affect the budworm's fate.
He also studied the budworm's diet;
It kept him busy, one can't deny it.

But still George found the time for leisure,
Birdwatching was one great pleasure.
Hiking, too, was up his alley,
His stride was swift, he didn't dally.

A Scout leader of great renown,
Both province-wide and in the town,
He served the movement long and well,
As friends and colleagues all can tell.

And now, alas, we sadly grieve,
George Harvey's taking final leave.
With great regret we say goodbye.
We'll miss G. H., and that's no lie.

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Spruce budworm larva, *Choristoneura fumiferana* (Lepidoptera, Tortricidae), one of the focal points of George's career at GLFC (illustration by Rob Johns, Canadian Forest Service).