

THE BUTTERFLY MAN

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John Kozial and part of his insect collection of 2500 +

Surprising talents are often discovered at local programs and displays and it was at a hobby show in Tisdale in the fall of 1988 that I first became aware of John Kozial's interest in entomology.

At present he and his mother Susan operate an 800-acre grain farm 7 mi. northeast of Bjorkdale where he attended school and graduated in 1978. In 1980 he graduated from the School of Agriculture at the University of Saskatchewan in Saskatoon with a diploma in agriculture. Unlike many of our young people today, he returned to the family farm, determined to make a

living from the land where, together, he and his mother continue to cope with the daily stress and yearly concerns of farming.

As a young child, John was often left to his own devices and most of his time was spent exploring and playing in the nearby woods and fields. It was during those early years that he first gained a respect and an appreciation for, and a love of nature that have remained with him to this day — a characteristic which is lacking in the majority of young people raised in today's sprawling, concrete, urban environments. Ever since John was a youngster, he has loved

reading and books, especially those on natural history, borrowed from local school and public libraries. In addition, relatives gave him books on science, including several on butterflies, moths and other insects. These piqued his interest even more. In his mid-teens, John visited the Natural History Museum in Regina where he saw his first mounted and organised insect collection. While there, he purchased a copy of Ronald Hooper's *Butterflies of Saskatchewan* — a book that he still uses and finds invaluable in identifying his Saskatchewan butterflies. On that day, 13 years ago, he resolved to begin collecting insects on a serious basis and his interest has never waned. So opportunity, talent and some outside influences have all played a part in nurturing John's interest in an unusual hobby.

A home declares the interests and personalities of its occupants in both obvious and subtle ways, and John and his mother both agree that their house is rapidly being taken over by equipment and products indicative of his hobbies. Large framed prints of butterflies, moths and flowers adorn the walls, volumes on entomology and photography line the bookshelves, his microscope, pens and labelling equipment are within easy reach and a faint odour of naphthalene lingers in the air. When I was there, the couch and coffee table served as a display area and I was thus able to examine his over 2500 specimens which are carefully arranged in shallow, wooden, glass-topped drawers.

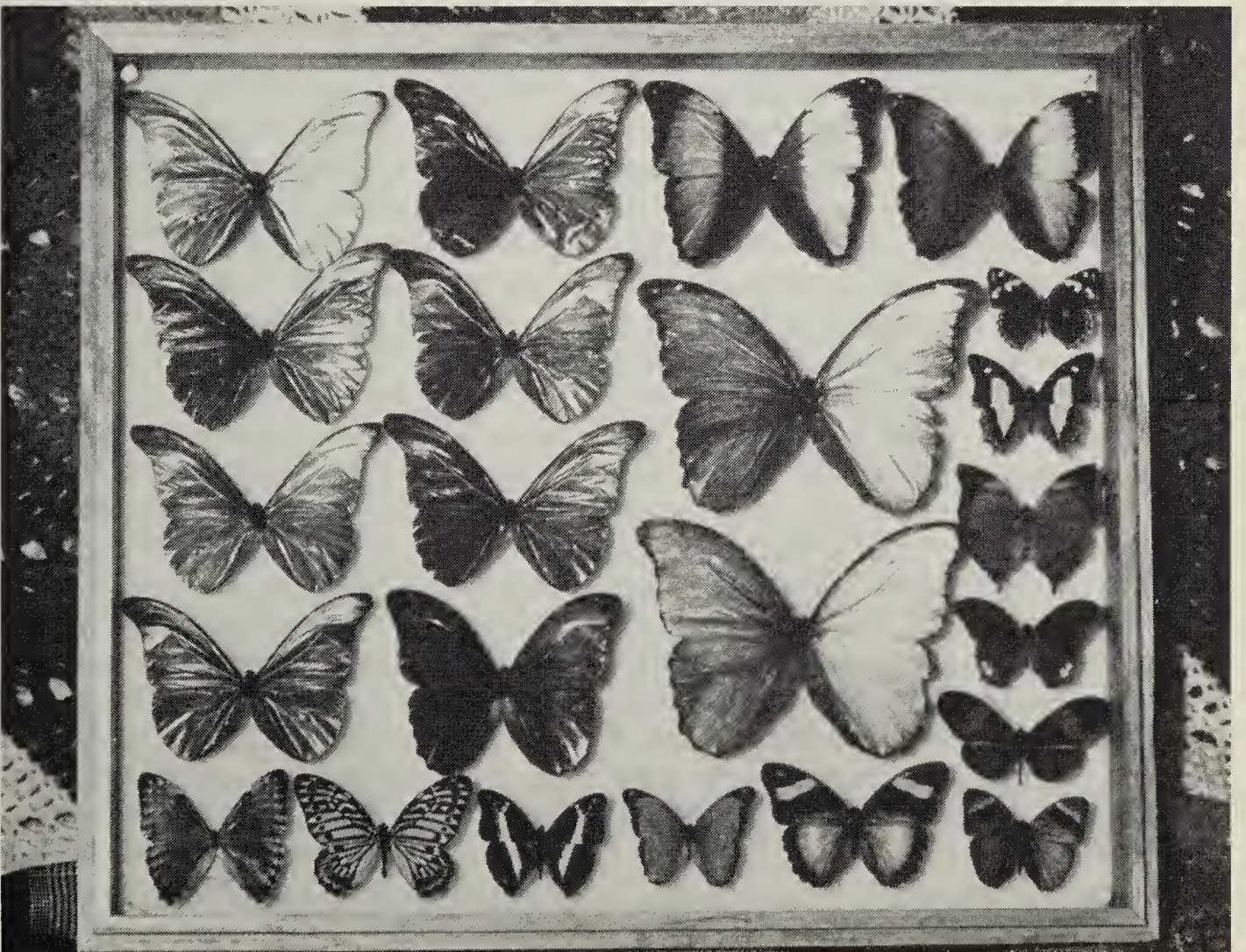
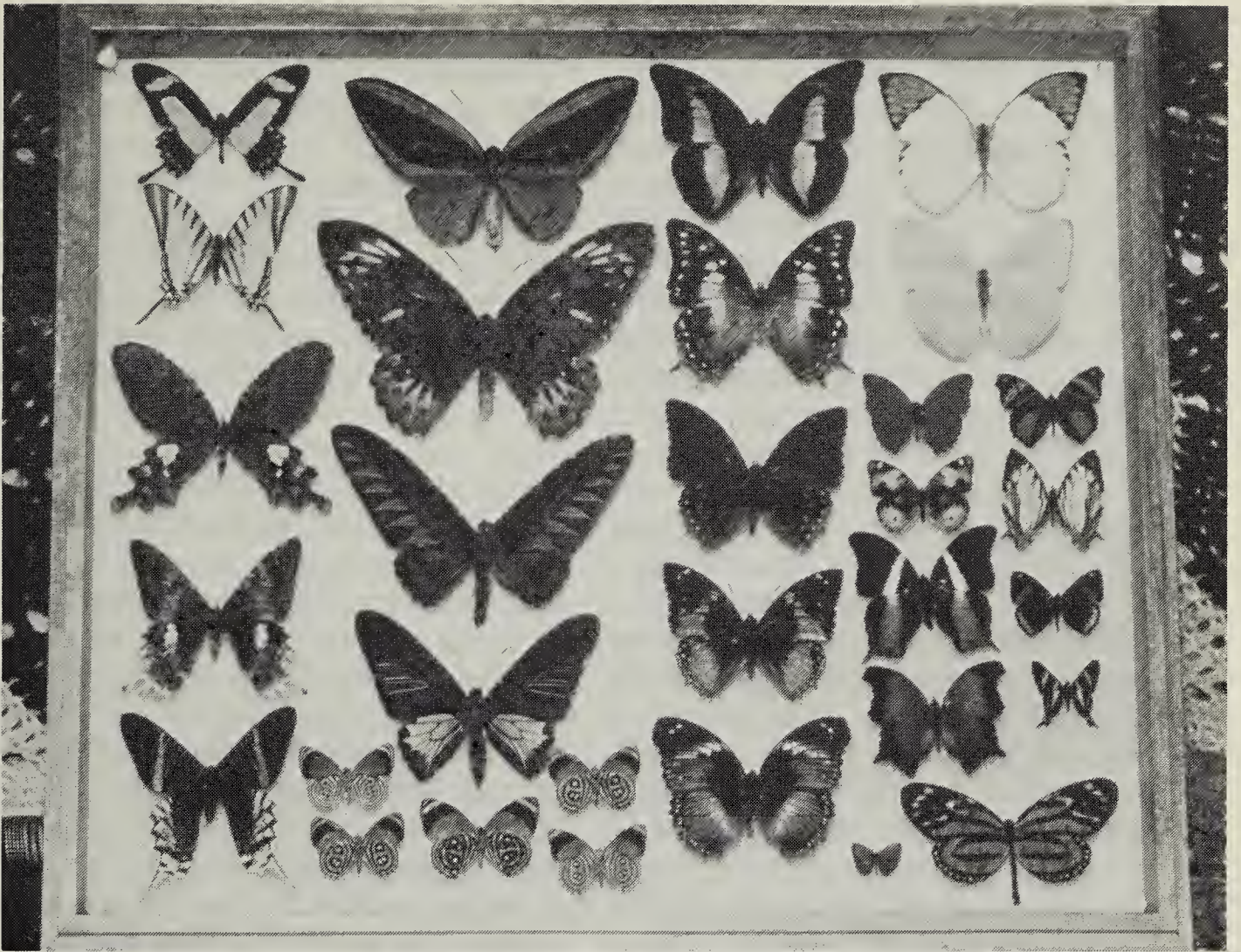
John explained that one of his uncles, a cabinet-maker, built the 24 glass-topped drawers for him. They will eventually be placed into a cabinet (his uncles's future project, along with another 24 drawers and cabinet). Since his collection was growing so rapidly, a safe, dark, dust-free storage place became essential. It was at this point that

I discovered the source of the naphthalene. Moth balls are used inside the cases to deter other insects such as clothes moths and carpet beetles from destroying the collection.

John began collecting in 1976. He became increasingly involved in collecting and studying insects and about 6 years ago joined the 95-member Entomological Society of Saskatchewan, a group of mainly professional entomologists employed by the Saskatoon and Regina Agriculture research stations. Belonging to a society enables him to keep in contact with other people of similar interests, with whom one can exchange specimens and information on new discoveries, rearing techniques, collecting trips, etc.

John showed me a microscope which the society had purchased for the use of its amateur members. "Nearly all of the members of the E.S.S. are professionals," he told me, "and they use microscopes every day at their work and have ready access to them ... unfortunately amateurs like myself, living 165 miles from the city, don't have such a convenience available to them. To remedy the situation the E.S.S. purchased this microscope to lend out to any member who needs it." John is on the microscope committee and says that any member may borrow the instrument simply by contacting him. The number of amateur collectors in Saskatchewan is quite low — perhaps less than a dozen throughout the province.

Most of John's specimens have been collected in Saskatchewan around his home at Bjorkdale. In the last three or four summers he has expanded his collecting area to include insects from all parts of Saskatchewan. He has collected in the Porcupine and Pasquia Hills near Hudson Bay, the Cypress Hills and Great Sand Hills of southwest Saskatchewan and in the new Grasslands



Cases of tropical butterflies in John's collection

Provincial Park near Val Marie and in the Killdeer Badlands. To capture his specimens, he uses an ordinary butterfly net, but admits, with a chuckle, that he tries to stay out of sight, doubting that a grown man chasing over the fields in such a fashion would go completely unnoticed. Three-quarters of John's collection is made up of moths (around 250 species) and these are captured in special light traps of his own construction set up in the yard at home.

Important in locating new species is first locating the insect's foodplants. "You have to be a fairly good botanist, as well, to be an entomologist," John explained, "because often you have to find and identify the food plants in order to locate those particular insects associated with the plants. 'Rearing out' insects is one of the most interesting aspects of the hobby. In my light traps I occasionally find some female moths (most moths attracted to lights are males) but, instead of adding them to my collection I will confine them in a small container like an ice cream pail, along with the right food plant and often they will lay eggs for me. From that stage on I can rear the larvae through to the pupal stage and eventually, with a little luck, adults will emerge. Many rare moths and butterflies for collections are reared, as they are so uncommon in the wild that perfect, unrubbed specimens are seldom collected." In many different parts of the world, particularly in the tropics, there are special "butterfly farms" which breed and rear insects for commercial purposes. These farms are beneficial as they provide an income for people in poorer countries without endangering the wild populations of insects. Many of the rarest and most spectacular insects are now protected by law in these tropical countries.

The rearing of insects is one area of entomology where an amateur can

make significant contributions, since almost nothing is known about the life histories of many of the more than 120,000 species of butterflies and moths in the world. With over a million described species of insects and many more yet undiscovered, there remains an enormous amount of study to be done. You will never get bored studying insects since new ones are always turning up right in your own back yard.

It is ideal to mount insect specimens as soon as possible after they have been collected, while they are still fresh and pliable. Much of the time this is not possible as several hundred specimens may be captured in a single day. The insects are first put into killing jars and are then stored in triangular paper envelopes called "papers" and are allowed to dry. Specimens can be kept in this manner for many years before being properly mounted. During the winter months, the insects can be "relaxed" in special relaxing boxes, such as airtight, plastic sandwich boxes filled with layers of damp toweling. The "papered" insects are placed between the layers of damp toweling and remain there usually about 12 hours or so, depending on their size. After that time they are again soft enough to mount or spread on special boards made for that purpose. Special insect pins, longer, thinner and more rustproof than ordinary pins, are inserted vertically through the thorax of the butterfly. It is this pin by which the specimen will always be handled. The body of the butterfly is then placed in the narrow groove of the spreading board and the wings are carefully manoeuvred into the correct position with tiny needles. Next, the wings are pinned and held in place with narrow strips of paper along the base of the wings. Waxed paper is used to cover the rest of the wings to prevent them from curling upwards as they are drying. Held fast in this flat position by countless pins around the

edges of the wings the specimen is left to dry for 3-4 weeks. No preservatives are used; the insect dries naturally. The specimens are then carefully removed from the boards. They are now very brittle and dry and are identified, labelled and arranged in their proper order in the collection. The entire process is very time consuming and requires patience and practice.

For labeling, John first used a small crow-quill pen and India ink, but now a very fine-tipped drafting pen is used along with custom-printed labels for specimens collected around Bjorkdale. Labels for those from outside this area are still printed by hand. Doing this labelling by hand is tedious work and a strain on the hands and eyes. The tiny labels, fitted to the pins below the insect, require very small printing. I truly perceived the patience needed to cope with such fine work when I noticed in the collection a number of minuscule black beetles about 0.25 inch long and the thickness of a pencil lead. For mounting, the tiny insects are glued to a "point" — a small, narrow triangle of cardboard which is then pinned to an ordinary insect pin. It is for the identification of these minute insects that a good microscope is essential.

John's collection of 81 different species of Saskatchewan butterflies represents only a little more than half of all the butterfly species found in the province. He is constantly striving to expand and complete his collection, but in light of the fact that insects are the most numerous animals on this earth it is truly an impossible task to complete. There are 750 species of butterflies found in North America. In the tiny Central American country of Costa Rica there are 2500 species and in Peru, South America, the even more incredible number of 3500. The total number of butterfly species found in the world is upwards of 20,000 with

another 100,000 species of moths. The collection of insects can take up an entire lifetime with no fear of ever running out of new species to discover.

Although John understands that some people have reservations about killing butterflies and other insects for display and study, he feels that the benefits of educating the public far outweigh the loss of an insect's life. It should be pointed out that insects are the most successful organisms on this planet, owing to their adaptability and their phenomenal reproduction rate. Very few species of insects have been brought to extinction due to the efforts of collectors. A much greater threat to their survival, and indeed to the survival of all living things, man included, is rampant habitat destruction and worldwide environmental pollution.

"When I had my collection on public display last fall," John told me, "one of the most commonly asked questions was 'Where did you find all of the different insects?' When I replied to the people that 90 percent of them were found right around my home, many were amazed. As a public educational display my collection has some value. It makes people, often for the first time in their lives, stop, look, and open their eyes to some of the small wonders all around them. Maybe some of them will gain a little more respect for these often overlooked, but important and fascinating living things. Perhaps some of this respect will deepen and turn into a greater appreciation for some of the natural and irreplaceable wonders left in this world, most of which the majority of us have taken for granted for far too long."

Acknowledgements

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