

## The Lichen Collection of Henry Imshaug at the Michigan State University Herbarium (MSC)

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**Abstract.** *The lichen collection assembled by Dr. Henry Imshaug at the herbarium of Michigan State University (MSC) is described. It is not only one of the largest in North America, but is notable also for its geographic range, including important collections from the Caribbean and several southern hemisphere island groups. Until recently this collection was not readily accessible, but it is now fully available to researchers through loans and visits.*

Henry A. Imshaug (1926–) (Fig. 1) was appointed professor of Botany and Assistant Curator of the Herbarium at Michigan State University in 1956. Two years later, the cryptogamic collection (excluding Pteridophytes) was consolidated as a separate administrative unit with Dr. Imshaug as its curator. At this time the cryptogamic collection was said to comprise about 40,000 specimens, but by the time of Henry Imshaug's retirement in 1990 the collection numbered over 145,000 fully accessioned specimens, with an additional 200,000 unmounted specimens in separate research collections. The majority of these collections were lichens. This remarkable growth was achieved largely through Henry Imshaug's zeal as a collector, primarily in the field but also from other institutions through the acquisition of the collections of other, mainly European, lichenologists (e.g., Almborn, Flagey, Havaas, Tavares, Ullrich) and exsiccatum specimens.

However, the collection is notable not just for its size, but as much for its geographic foci, and the high quality of its curation. Initially, Henry Imshaug collected widely in western North America and the Great Lakes area, but in 1952 he began a series of National Science Foundation (US) funded expeditions to investigate the lichens of the Caribbean and the subantarctic that was to last until 1972. Henry Imshaug paid due attention to all groups of lichens, including the crustose microlichens and, in the case of many of the austral and Caribbean localities, his collections are the most thorough ever made from these areas.

The geographical distribution of the accessioned specimens is given in Table 1. By far the largest proportion are from North America, with approximately half of these (ca 27,000 collections) originating from the Great Lakes Region, mainly Michigan and Ontario. These were collected by Imshaug and his graduate students, including C. M. Wet-

more, R. C. Harris, F. E. Erbsich, J. Malachowski, T. D. Trana, & R. S. Common. There is also a large collection from the Black Hills (South Dakota/Wyoming) made by C. M. Wetmore. A further ca 18,000 collections are from western North America, with important collections from Alaska (ca 1,000), the northwest U.S.A. (ca 4,750), and British Columbia (3,250—mostly collected by K. Ohlsson). Eastern North America is less well-represented, although MSC does hold I. M. Brodo's collections from Long Island (4,020) and R. M. Taylor's maritime collections from Maine and Nova Scotia (2,505). All the above mentioned collectors were graduate students of Henry Imshaug's.

The collections from the Caribbean islands were mostly made by Henry Imshaug between 1952 and 1963 and total ca 15,000 specimens. These include over 3,000 collections from Jamaica, 2,500 from Puerto Rico (made by Landrón in 1967–1968), and over 1,000 from each of Haiti and the Dominican Republic. There are also significant collections from Cuba, St Lucia, St Vincent, Tobago, Trinidad, and Dominica.

The distribution and extent of the southern hemisphere collections are shown in Figure 2. They include large holdings from southern South America (Falkland Islands (2,738), Brunswick Peninsula, and the Straits of Magellan (4,013), Tierra del Fuego (2,193), and Isla de los Estados (Staten Island) (3,554)), Îles Kerguelen (1,893), and the New Zealand shelf islands (4,634). On these expeditions, Imshaug was usually accompanied by one or more of his graduate students, including R. C. Harris, K. Ohlsson, G. C. Bratt, & R. S. Common. Europe, Africa, and Asia are less well represented, although there is a large collection from the Canary Islands, made by Imshaug and his son Frederick in 1963–1964 (2,620). Details of all the sites from where collections were made are contained in Imshaug's collecting books, which are also held in MSC.

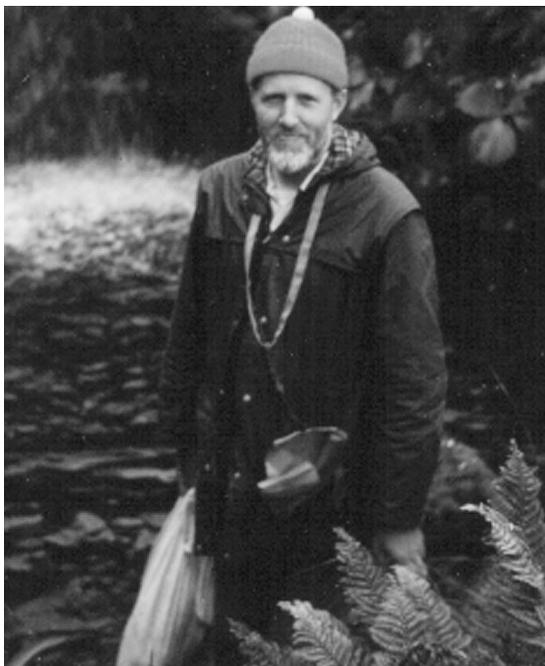


FIGURE 1. Dr Henry A. Imshaug. Photo taken on Campbell Island (New Zealand) in January, 1970 by Dale Vitt.

Henry Imshaug was an extremely careful and thorough worker. His prodigious knowledge of lichens, thorough familiarity with the literature, and careful research resulted in his discovering over 100 new species and several genera among his collections that were given herbarium names, under which they were accessioned and filed. He was also a perfectionist who did not publish 'interim' results or describe new species on their own, preferring to tie everything up in one definitive package. He was working towards major lichen floras of the Great Lakes Region and the subantarctic, the latter, in particular, an extremely optimistic undertaking for one person, and he intended to publish these names when this work was completed. Some of the new taxa that he discovered have subsequently been described under different names (e.g., the genus *Poeltidea* Hertel, the genus and species *Labyrintha implexa* Malcolm, Elix & Owe-Larsson, and the species *Chroodiscus australis* Kantvilas & Vězda), while material of others has now been loaned to workers specializing in specific genera (e.g., *Lecidea*, *Placidopsis*, *Placopsis*, and *Rinodina*).

The accessioned specimens were superbly curated by Henry Imshaug. Only 100% rag paper was used and each specimen was mounted on a separate herbarium sheet with a pre-printed label, which for the subantarctic collections included a map indicating the location of the collection site. In addition, many thousands of sheets contain thin layer chromatography data and many also have detailed

TABLE 1. Accessioned holdings of the MSC lichen collection by geographical region, estimated from a count of 20% of the collection.

Geographic Region	Number
North America (incl Mexico, excl Michigan)	40,750
Michigan	16,775
Caribbean	15,000
South America	12,000
Europe, Africa, Asia	8,500
Australasia (incl Isles Kerguelen)	6,000
Exsiccata	10,250
Total	109,275

anatomical descriptions and measurements included.

Unfortunately, the unaccessioned specimens were less well-curved and, when the Cryptogamic Herbarium was reunited with the MSC Herbarium in 1993, a program was initiated to reorganize the lichen collection. Since 1993, thousands of unfiled and/or unaccessioned specimens have been organized and refiled, approximately 60,000 specimens sent out on exchange or as gifts, and the collection re-arranged alphabetically by genus.

Henry Imshaug's collection has never been easily accessible because lichen material was rarely available on loan and, for the past decade, it has lacked a curator. However, a recent U.S. National Science

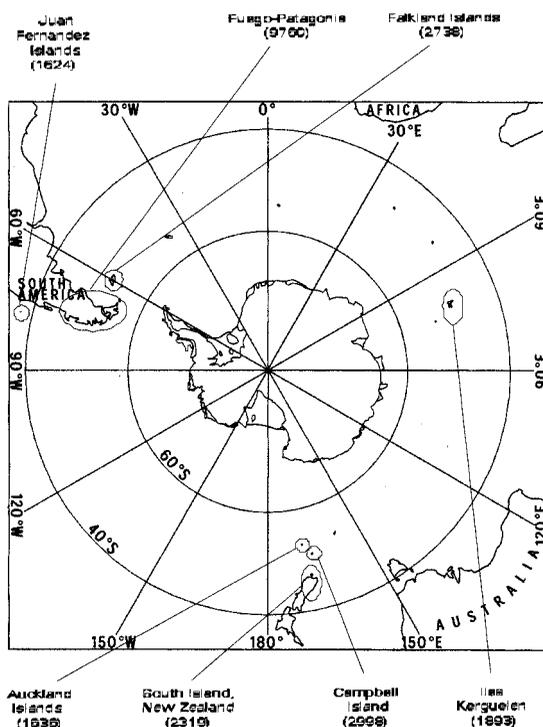


FIGURE 2. Map of austral regions, showing the collection sites of H. Imshaug and his students with the number of collections made from each area in parentheses.

Foundation award has led to the re-activation of the collection that is now fully accessible through visits and loans. The collection has been transferred to a compactor storage system, and is now arranged within each genus by species, and then, in color-coded folders, by geographic regions (i.e., North America, Michigan, Caribbean Islands, Central and South America, Australasia, and Old World). An additional 30,000 identified lichen specimens have been accessioned into the herbarium, which has brought the total to approximately 110,000, making it one of the largest in North America.

A further 30,000 collections remain unaccessioned. These are almost entirely additional collections of Henry Imshaug and his students, and are stored in cardboard boxes housed, temporarily, in a separate room. Although it is difficult to determine how many of these collections are duplicates, it is anticipated that, when they have been processed, around half will be accessioned into MSC and the remainder distributed to other herbaria. Henry Imshaug and his students identified a large proportion of these specimens to, at least, genus and wrote the identifications directly on the packets. However, these determinations are in need of revision due to taxonomic and nomenclatural advances made during the intervening years and much work remains to be done before they can be accessioned into the herbarium.

The value of the collection is demonstrated by the many publications that have been based, at least partly, on Henry Imshaug's collections in recent years. In addition to use in taxonomic and floristic studies (Ahti 2000; Fryday 2000a; Galloway et al. 1995; Guderley 1999; Lindbolm 1997; Messuti & Archer 1998; Stenroos 1993, 1995, 1996; Stenroos & Ahti 1990, 1992; Stenroos et al. 1992; Wetmore 1994, 1996; Wetmore & Kärnefelt 1999), new species have been described (Fryday & Common 2001; Kantvilas & Vězda 2000; Messuti & Archer 1999), and distributions modified (Fryday 2000b,c,d). Specimens from MSC have also been distributed as part of a published exsiccatum (Wetmore 1999).

After an interlude of 10 yr since Henry Imshaug's retirement, lichenological research and curation is again being pursued at Michigan State University. Many lichenologists have visited MSC over the last two years to conduct specimen-based research, most of them courtesy of the NSF award. The first author has been appointed to the permanent position of assistant curator of the herbarium and is actively engaged in curating the Imshaug collection. He is also engaged in taxonomic/nomenclatural research on the collections and is working towards checklists/catalogues of the regions Imshaug visited. As a first step towards this

an annotated checklist of the Lichens of Michigan has recently been compiled (Fryday et al. in press).

Although Henry Imshaug's publications include important lichen catalogues (Imshaug 1956a,b, 1957a,b) and systematic studies (Imshaug 1977; Imshaug & Brodo 1966), his published output was low. His legacy will be the extensive lichen collection that he assembled at Michigan State University, his graduate students who went on to become respected lichenologists (e.g., I. M. Brodo, R. C. Harris, and C. M. Wetmore), and the many species (e.g., *Bundophoron imshaugii*, *Hypogymnia imshaugii*, *Lecanora imshaugii*, *Pseudocyphellaria imshaugii*) and one genus (*Imshaugia*) named after him.

A more detailed version of this article is available on the MSC Herbarium web site at <http://www.bpp.msu.edu/herbarium/index.html>.

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