10. Smithsonian Plant Collections, Guyana: John J. Pipoly, III: An Update

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The Smithsonian's Biological Diversity of the Guiana Shield (BDG) Program began as the "Flora of the Guianas" Program in 1986. The Flora was a joint project of the Smithsonian Institution (SI); New York Botanical Garden (NY); **National Herbarium of the Netherlands, Utrecht** (U); Botanischer Garten und Botanisches Museum Berlin-Dahlem (B); Muséum National d'Histoire Naturelle Herbarium (P); Institut de Recherche pour le Developpement, Cayenne (CAY); University of Suriname (BBS); and the University of Guyana (BRG). The BDG program has evolved over the years and eventually became a stand-alone project that covered many groups of organisms across the entire Guiana Shield area of northeastern South American. It now covers five political entities (Guyana, Suriname, French Guiana, and parts of Venezuela and Brazil) all of which regions are little known and extremely rich biologically.

In 1986 Guyana, in particular, had a diverse array of habitats and was relatively unexplored, and as a result had few collections in herbaria around the world. The ecosystems in Guyana vary from savannas to dense Greenheart forests and coastal mangroves to the unique flat-top table mountains or *tepuis* made famous by Arthur Conan Doyles' (1912) book "The Lost World". All are renowned for the high endemicity of plants and animals. Unlike other areas of South America, over 70% of the natural habitat was still pristine at the time the BDG program began work in the region.

Across the Shield area and in Guyana in particular, logistics for early expeditions were difficult. Without the modern conveniences we now enjoy such as cell phones and email, communications depended on letters, telex, and the occasional facsimile (Fax) with a somewhat long lag time between answers. The Department of Botany, Smithsonian Institution, decided to focus its collecting efforts in Guyana. To jumpstart the collecting efforts, and to help with logistics, a resident collector position was established. The first person to hold that position was Dr. John J. Pipoly III; at the time he was a recent graduate of the PhD program at the New York Botanical Garden.

Critical to the success of the program was the correspondence with Dr. George Walcott, the Vice-Chancellor, UG. Without his help little would have been accomplished. Walcott and the Smithsonian agreed on the basic framework of a joint collecting program. Pipoly and his wife Fabiola arrived in Georgetown, Guyana, on 2 April 1986. Pipoly set up the infrastructure necessary for a successful plant collecting program. He immediately arranged to have supplies shipped down for the first project that he undertook, the construction of three plant dryers at UG. Once the plant dryers were working he was able to begin collecting plants.

Pipoly lived in Guyana for 12 months and during that time he spent 140 days in the field; he departed in May 1987. During that time he collected 4574 numbers, 1929 of which were processed by New York Botanical Garden and 2645 of which were processed by the U.S. National Herbarium at the Smithsonian Institution. This included distribution to specialists for determination and to other institutions as part of specimen exchange programs. Currently just over 80% of these plants have been identified to species. Most of the unidentified specimens are in "orphan families": groups that did not have specialists at that time to do the identifications. The current totals show that Pipoly collected over 1600 taxa in 680 genera. One set of his collections and a photocopy of his field notebooks were left in Guyana at the Jenman Herbarium,

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University of Guyana. These collections were later moved to the "Centre for the Study of Biological Diversity", also housed at the University of Guyana.

Dr. Pipoly, an expert in the Clusiaceae and Myrsinaceae families, eventually went on to work for the Missouri Botanical Garden and the Botanical Research Institute of Texas, and is currently the Urban Horticulture Extension Agent, UF-IFAS/Broward County, Fort Lauderdale, Florida.

A report of Pipoly's botanical expeditions for the BDG Program was published in 2000 (Hollowell et al., 2000) but it lacked many of the characteristics of the reports of later collectors. There are two reasons for this lack of information. Most importantly, during Pipoly's tenure as a resident collector trip reports were not required (nor had they even been considered). Second, he held a job that required intense concentration, and had little time to participate in the publication. As a result his *Smithsonian Plant Collection* volume was published with only collecting localities, exsiccate of taxa by collection number and by determination, and collection locality maps. An electronic version on this publication can be found on the BDG website at http: //botany .si.edu/bdg/pipoly/index.html.

For subsequent collectors more information was available. Currently full reports are available for the following collectors: Lynn J. Gillespie, Tim McDowell and H. David Clarke. Smithsonian Collection series for Bruce Hoffman and Terry W. Henkel are expected to be available by late 2014. More information about BDG expeditions, as well as updated lists of collection determinations and interactive maps, can be found online on the BDG website, at: http: //botany.si.edu/bdg/expeditions.html.

The original publication on Pipoly's year in Guyana (Hollowell et al., 2000) had a set of maps showing the localities for each of Pipoly's major collecting trips outside of Georgetown. These maps simply plotted symbols within the outline of Guyana and its rivers and lacked any other reference points. Subsequently these maps have been generated using *ArcMap* (ESRI, 2002) and include major rivers, and landmarks (Maps 10.1-10.6). In addition, selected points furnished with dates and place names and more points added per trip each map provides a detailed view of the expedition.

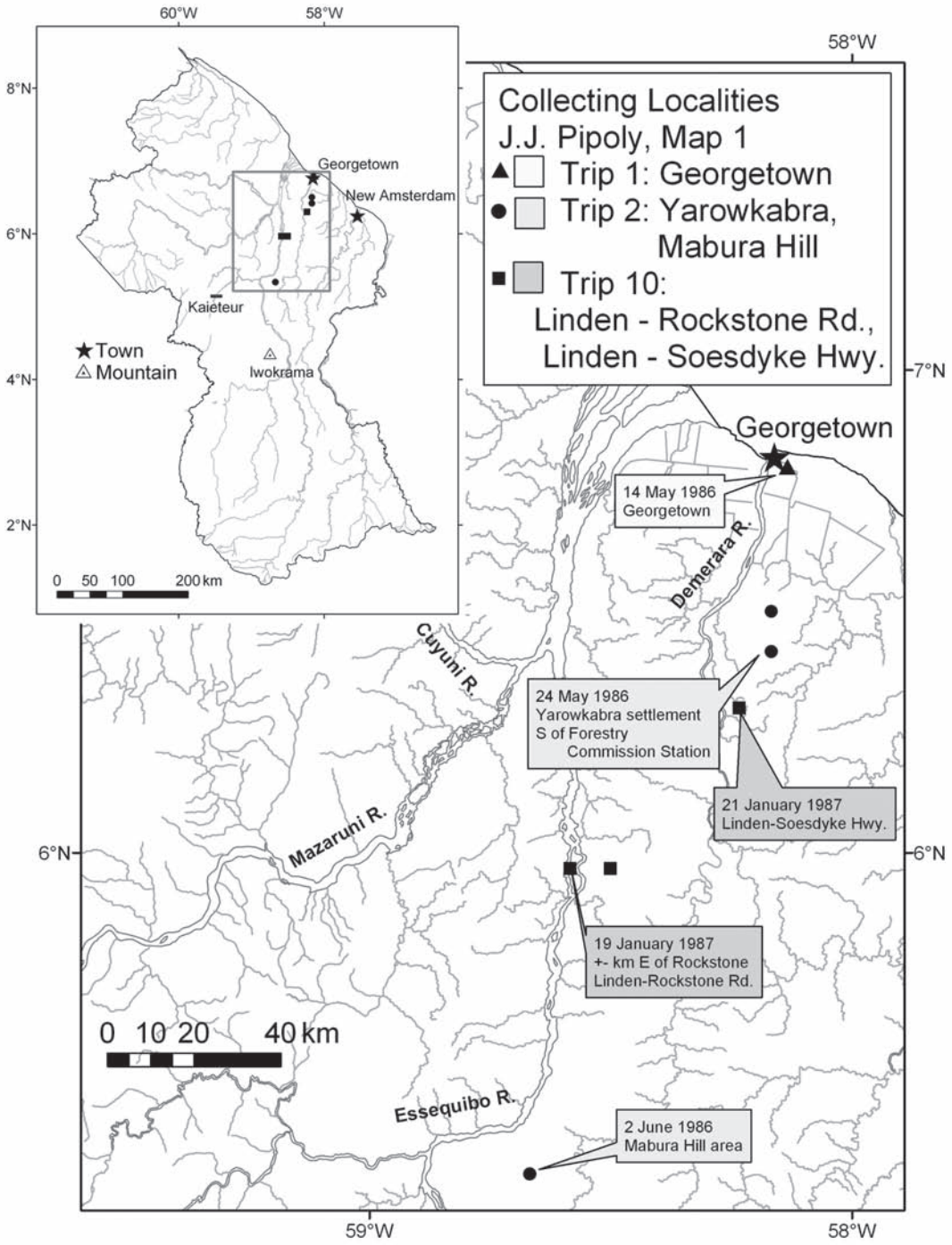
Ideally these updated maps should be used along with *Smithsonian Plant Collections, Guyana: 1986-1987, John J. Pipoly III* volume (Hollowell et al., 2000) and the information found on the BDG website, http: //botany. si.edu/bdg/index.html.

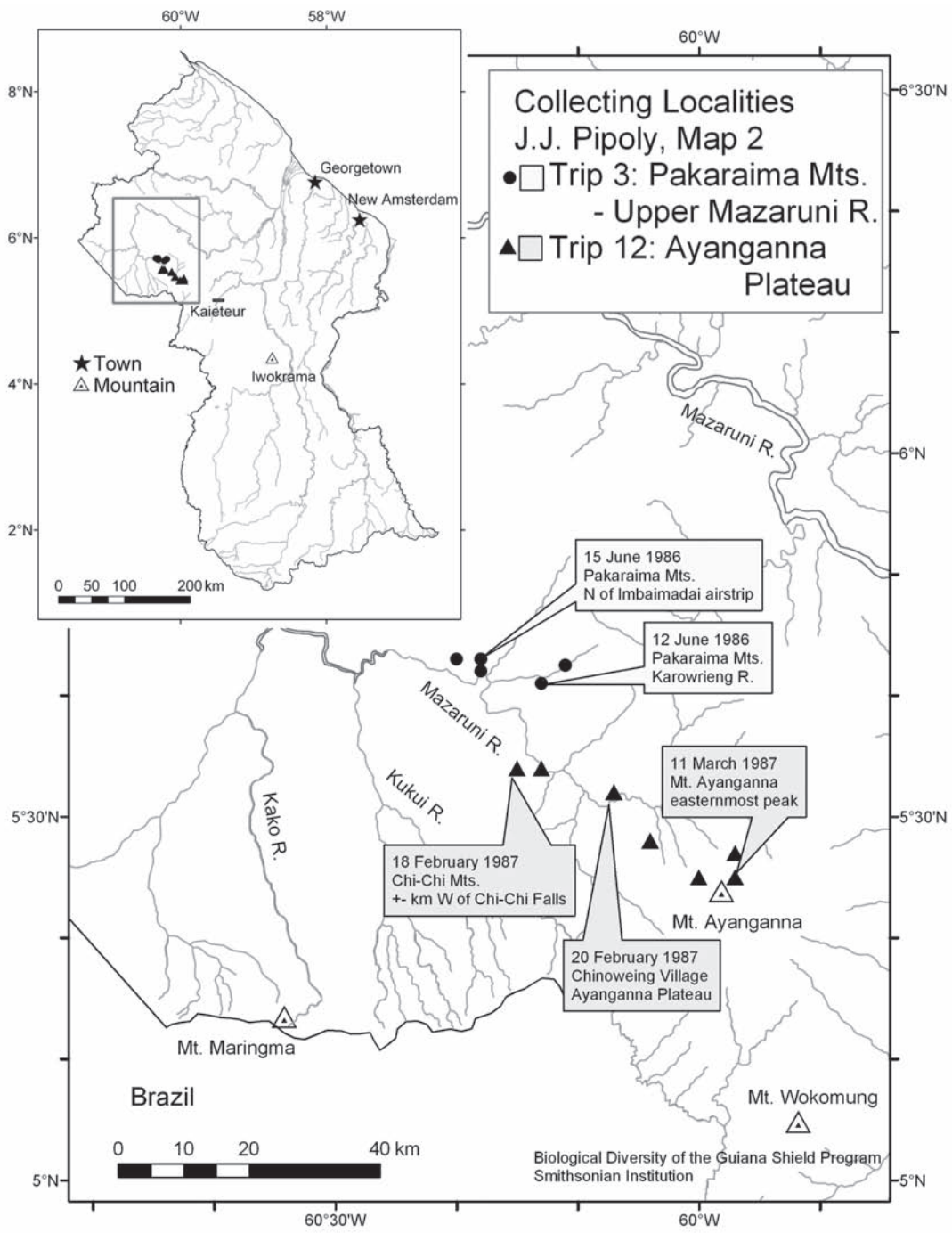
LITERATURE CITED

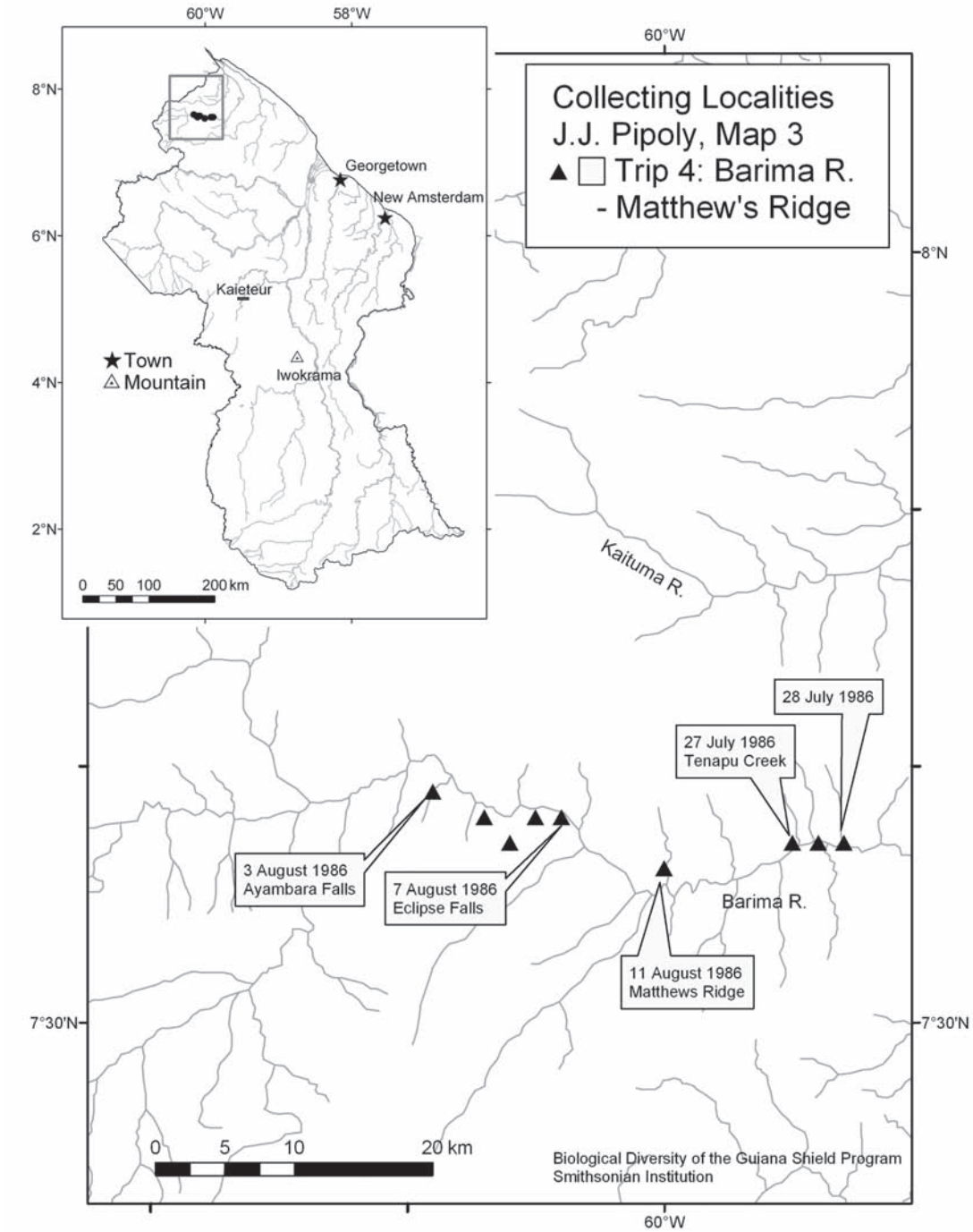
Doyle, A.C. 1912. *The Lost World.* London, England, The Penguin Group.

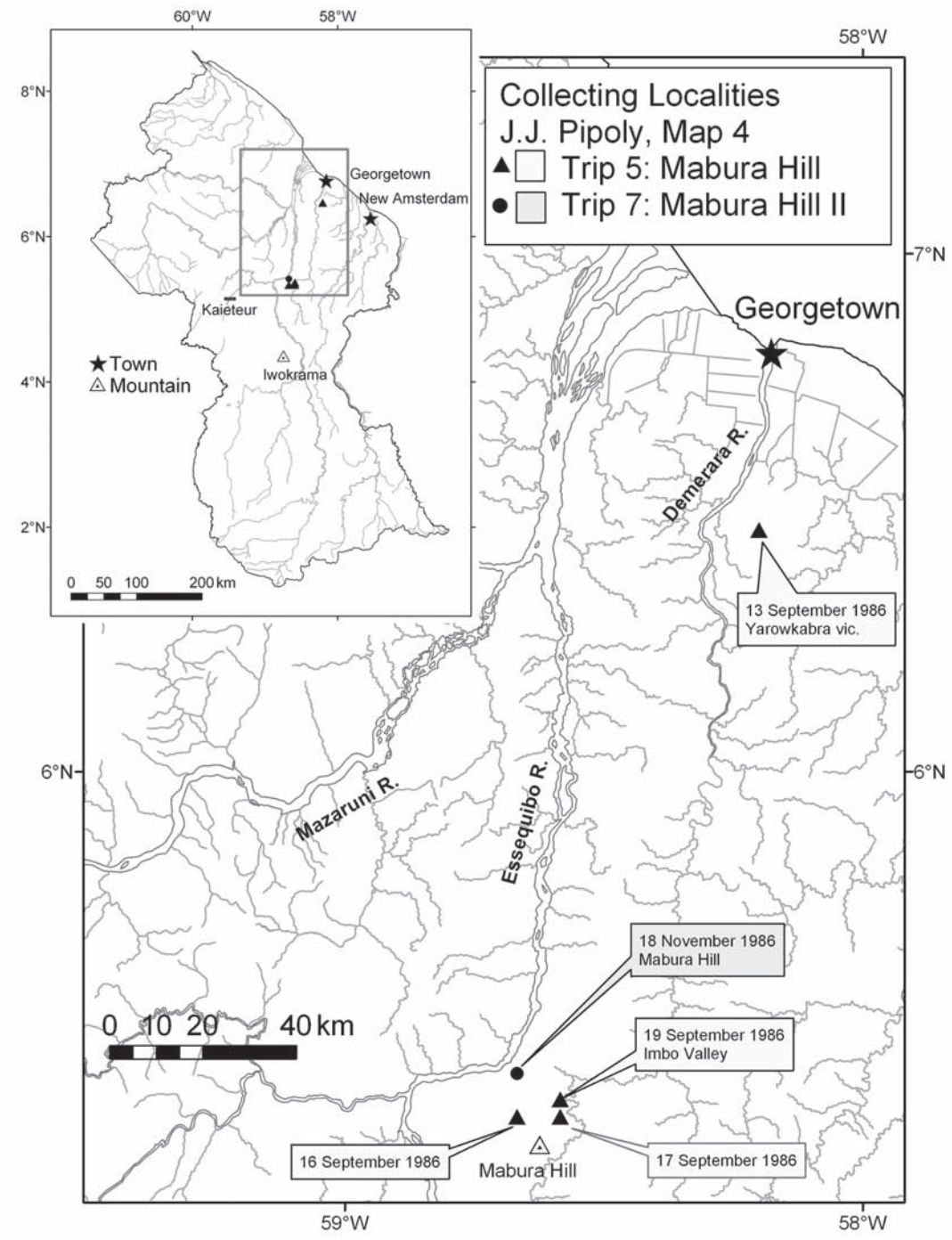
ESRI. 2002. *ArcMap 8.3.* Environmental Systems Research Institute, Redlands, CA.

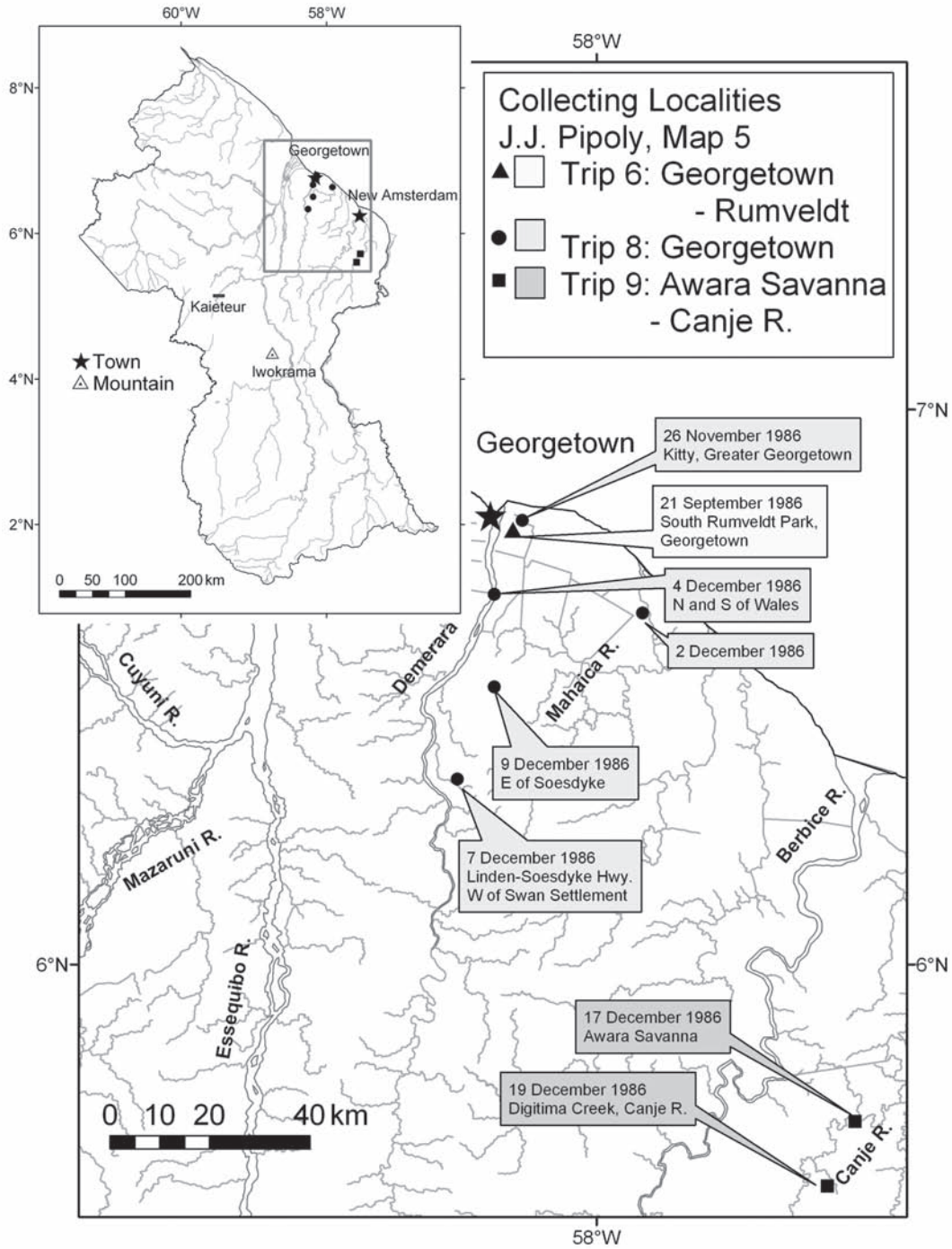
Hollowell, T., V. A. Funk, C. L. Kelloff & G. Gharbarran. 2000. *Smithsonian Plant Collections, Guyana: 1986-1987, John J. Pipoly III.* Washington, DC, Smithsonian Institution.

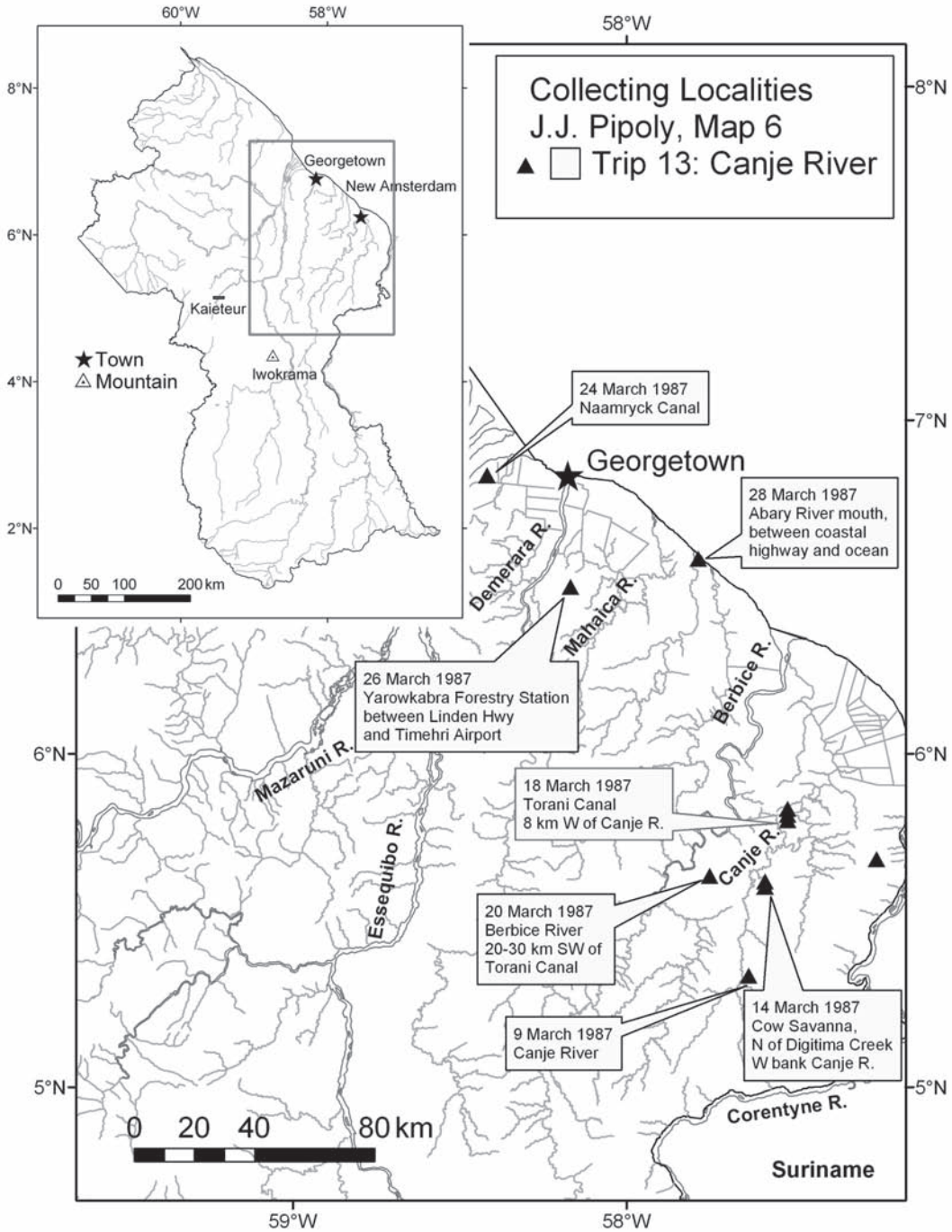

60°W
58°W
8°N
6°N
4°N
2°N
Georgetown
New Amsterdam
Kaieteur
Iwokrama
★Town
△ Mountain
0 50 100 200 km
58°W
Collecting Localities
J.J. Pipoly, Map 1
Trip 1: Georgetown
Trip 2: Yarowkabra, Mabura Hill
Trip 10: Linden - Rockstone Rd., Linden - Soesdyke Hwy.
7°N
Georgetown
14 May 1986 Georgetown
Demerara R.
Cuyuni R.
24 May 1986 Yarowkabra settlement S of Forestry Commission Station
21 January 1987 Linden-Soesdyke Hwy.
Mazaruni R.
6°N
6°N
19 January 1987 +- km E of Rockstone Linden-Rockstone Rd.
0 10 20 40 km
Essequibo R.
2 June 1986 Mabura Hill area
59°W
58°W


60°W
58°W
8°N
6°N
4°N
2°N
Georgetown
New Amsterdam
Kaieteur
Iwokrama
★Town
△Mountain
0 50 100 200 km
Collecting Localities
J.J. Pipoly, Map 2
Trip 3: Pakaraima Mts. - Upper Mazaruni R.
Trip 12: Ayanganna Plateau
60°W
6°30'N
6°N
5°30'N
5°N
60°30'W
Mazaruni R.
15 June 1986
Pakaraima Mts.
N of Imbaimadai airstrip
12 June 1986
Pakaraima Mts.
Karowrieng R.
Kukui R.
Kako R.
11 March 1987
Mt. Ayanganna
easternmost peak
18 February 1987
Chi-Chi Mts.
+- km W of Chi-Chi Falls
Mt. Ayanganna
20 February 1987
Chinoweing Village
Ayanganna Plateau
Mt. Maringma
Brazil
Mt. Wokomung
0 10 20 40 km
Biological Diversity of the Guiana Shield Program
Smithsonian Institution


60°W
58°W
8°N
6°N
4°N
2°N
Georgetown
New Amsterdam
Kaieteur
Iwokrama
★Town
△Mountain
0 50 100 200 km
Collecting Localities
J.J. Pipoly, Map 3
▲ □ Trip 4: Barima R.
- Matthew's Ridge
Kaituma R.
28 July 1986
27 July 1986
Tenapu Creek
3 August 1986
Ayambara Falls
7 August 1986
Eclipse Falls
Barima R.
11 August 1986
Matthews Ridge
7°30'N
0 5 10 20 km
Biological Diversity of the Guiana Shield Program
Smithsonian Institution


Collecting Localities
J.J. Pipoly, Map 4
Trip 5: Mabura Hill
Trip 7: Mabura Hill II
Georgetown
New Amsterdam
Kaieteur
Iwokrama
Town
Mountain
0 50 100 200 km
Demerara R.
13 September 1986
Yarowkabra vic.
Mazaruni R.
Essequibo R.
18 November 1986
Mabura Hill
19 September 1986
Imbo Valley
16 September 1986
17 September 1986
Mabura Hill
0 10 20 40 km
60°W
58°W
8°N
6°N
4°N
2°N
7°N
59°W


60°W
58°W
8°N
6°N
4°N
2°N
Georgetown
New Amsterdam
Kaieteur
Iwokrama
★Town
△Mountain
0 50 100 200 km
58°W
Collecting Localities
J.J. Pipoly, Map 5
Trip 6: Georgetown - Rumveldt
Trip 8: Georgetown
Trip 9: Awara Savanna - Canje R.
7°N
Georgetown
26 November 1986
Kitty, Greater Georgetown
21 September 1986
South Rumveldt Park, Georgetown
4 December 1986
N and S of Wales
2 December 1986
Demerara R.
Mahaica R.
Cuyuni R.
9 December 1986
E of Soesdyke
Berbice R.
Mazaruni R.
7 December 1986
Linden-Soesdyke Hwy.
W of Swan Settlement
Essequibo R.
6°N
17 December 1986
Awara Savanna
19 December 1986
Digitima Creek, Canje R.
Canje R.
0 10 20 40 km
58°W


Collecting Localities
J.J. Pipoly, Map 6
Trip 13: Canje River
Georgetown
New Amsterdam
Kaieteur
Iwokrama
Town
Mountain
0 50 100 200 km
24 March 1987
Naamryck Canal
28 March 1987
Abary River mouth,
between coastal
highway and ocean
26 March 1987
Yarowkabra Forestry Station
between Linden Hwy
and Timehri Airport
18 March 1987
Torani Canal
8 km W of Canje R.
20 March 1987
Berbice River
20-30 km SW of
Torani Canal
9 March 1987
Canje River
14 March 1987
Cow Savanna,
N of Digitima Creek
W bank Canje R.
Demerara R.
Mahaica R.
Berbice R.
Mazaruni R.
Essequibo R.
Canje R.
Corentyne R.
Suriname
0 20 40 80 km
60°W
58°W
59°W
8°N
7°N
6°N
5°N
4°N
2°N