British Museum (Natural History)

Ruwenzori Expedition

1952

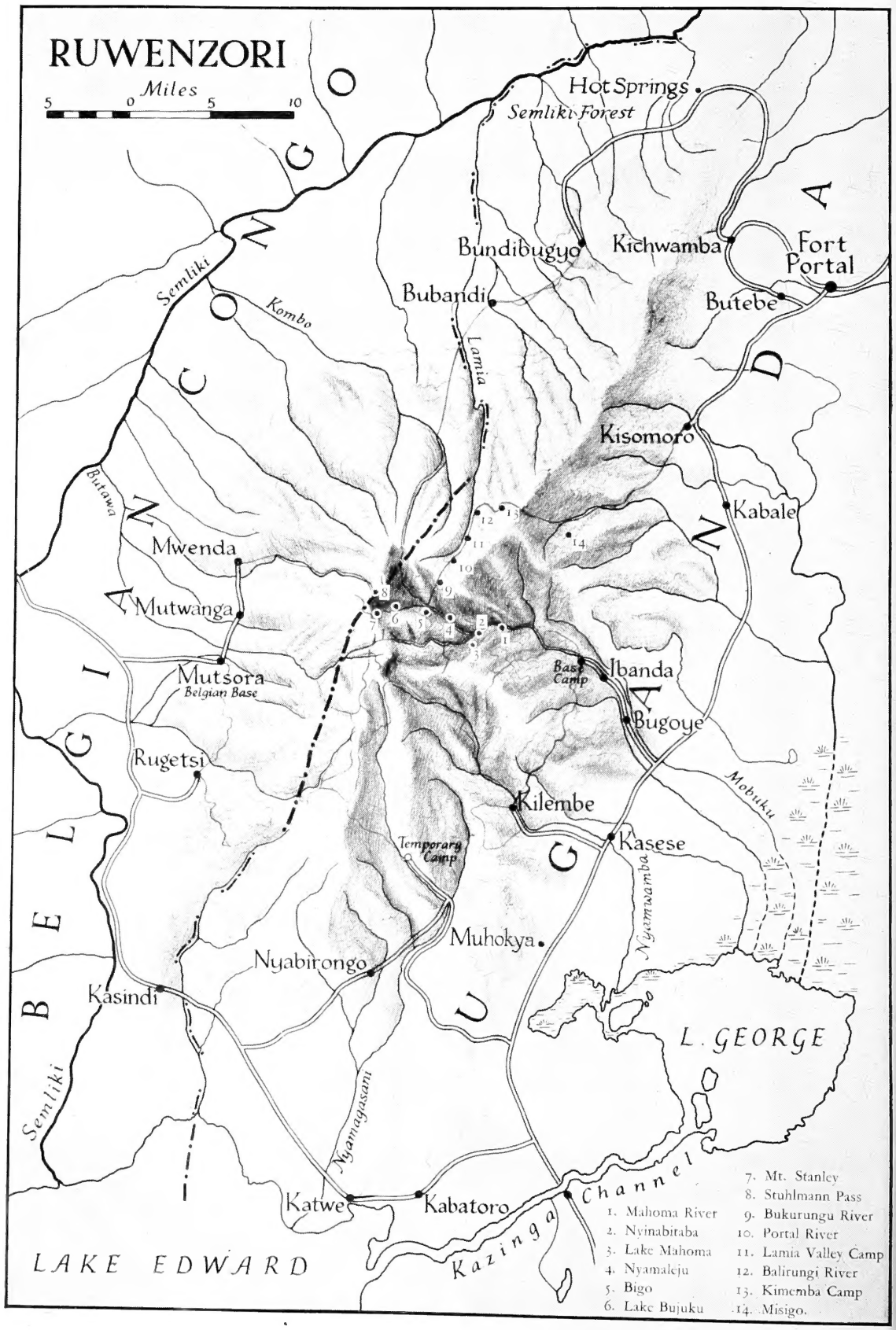
Volume I, Number 1

Introduction
with List of Localities

by

G. O. EVANS and D. S. FLETCHER

London
Printed by order of the Trustees of the British Museum
Issued 24 February, 1958. Price Two Shillings and Sixpence net


RUWENZORI
Miles
5 0 5 10
Hot Springs
Semliki Forest
Bundibugyo
Kichwamba
Fort Portal
Bubandi
Butebe
Semliki
Kombo
Lamia
Kisomoro
Kabale
Butawa
Mwenda
Mutwanga
Mutsora
Belgian Base
Base Camp
Ibanda
Bugoye
Rugetsi
Kilembe
Mobuku
Temporary Camp
Kasese
Nyamwamba
Muhokya
Nyabirongo
Kasindi
L. GEORGE
Semliki
Nyamagasani
Katwe
Kabatoro
Channel
LAKE EDWARD
Kazinga
1. Mahoma River
2. Nyinabitaba
3. Lake Mahoma
4. Nyamaleju
5. Bigo
6. Lake Bujuku
7. Mt. Stanley
8. Stuhlmann Pass
9. Bukurungu River
10. Portal River
11. Lamia Valley Camp
12. Balirungi River
13. Kimemba Camp
14. Misigo.

Preface

The insects collected by the late Dr. F. W. Edwards and his colleagues on Ruwenzori in 1934–5 consisted mainly of Diptera and these have been largely worked out and published in Volumes 1 and 2 of *Ruwenzori Expedition 1934–5*. A few papers on other orders were pubished in Volume 3 but in general work on these other groups has been fragmentary. It has now been decided that this series shall be wound up and a new one commenced to be entitled *Ruwenzori Expedition 1952*. This will deal principally with the material collected during the 1952 expedition but it is proposed that if possible it will include papers on any un-worked material remaining from the previous expedition. Volume 1 will cover the Lepidoptera, Volume 2 other orders of insects and Volume 3 the Arachnida and Myriapoda.

W. E. China
Keeper of Entomology


BRITISH MUSEUM
MAR 1952
NATURAL HISTORY

Introduction with List of Localities

G. O. Evans and D. S. Fletcher

A full account of the Ruwenzori region, illustrated by numerous photographs, appeared in *Ruwenzori Expedition 1934–5*, Volume 1, Number 1 and it is only necessary here to give the following notes on the composition and on the itinerary of the expedition which visited the area in the summer of 1952.

It was led by Professor W. Q. Kennedy of the Department of Geology at the University of Leeds. Its members consisted principally of geologists from Britain and the Uganda Department of Geological Survey but they were accompanied by three biologists from the British Museum (N.H.), Mr. R. Ross (botanist), Dr. G. O. Evans (zoologist) and Mr. D. S. Fletcher (entomologist).

This was the third expedition to Ruwenzori in which members of the British Museum had taken part. The zoological and entomological work of Legge and Wollaston on the first British Museum expedition in 1905–6 was carried out principally in the lower part of the Mubuku Valley, up to about 6000 ft., with occasional trips to higher elevations, and in the savannah country near Muhokya on the north-east shore of Lake George. During the second expedition in 1934–5, Dr. F. W. Edwards and D. R. Buxton collected mainly at the southern end of the mountain, working up the Nyamwamba and Nyamagasani Valleys from their base at Kilembe; brief visits were also paid to the lower Mubuku Valley, Fort Portal and to the western side of the Bwamba Pass. The pattern of the collecting during the 1952 expedition followed closely the zoning of the vegetation, as long a time being spent in each of the successive zones as seemed profitable, special attention being paid to the ericaceous and alpine belts of the central and northern parts of the mountain, which had not previously been collected. These vegetation zones are fully described and figured by O. Hedberg (1951, Svensk Botanisk Tidskrift, 45:140–202) and the zones of the Mubuku and Bujuku Valleys are treated in detail and well figured by Fishlock and Hancock (1932, J. E. Afr. & Uganda nat. Hist. Soc., Number 44:205–229). Two weeks were also spent at Bundibugyo on the north-west side of Ruwenzori from which base, expeditions were made to the equatorial rain forest of the Semliki Valley. At the end of this introduction, there will be found a list of the localities, arranged in order of zones of vegetation, which we visited between July and September 1952. Included also are the range of maximum shade and minimum night near-ground temperatures recorded in those localities in which camps were established.

The zoological collecting was restricted almost entirely to the soil fauna except for spiders (*Araneae*) collected from herbage and low-lying bushes by the usual methods of sweeping and beating, and a few miscellaneous vertebrates. The micro-arthropods were extracted from the soil, forest litter, moss and lichen samples in a modified Berlese Funnel shown in the accompanying photograph. This type of apparatus is widely used in Europe and functions on the principle that the majority of the active stages of soil and litter inhabiting arthropods are susceptible

to desiccation and migrate from the sample as it dries out. Owing to the high relative humidity prevailing in the collecting areas, especially on the mountain, a paraffin pressure radiator was used to speed up the desiccation of the sample. The duration of the treatment of the samples varied according to their initial moisture content, but averaged three days. A battery of four funnels was operated and ninety-eight samples were treated from the following zones: twenty from the Equatorial Rain Forest, twenty from the Elephant Grass Belt, thirty from the Montane Rain Forest Belt, sixteen from the Ericaceous Belt and twelve from the Alpine Belt. The extractions contained numerous Acarina and Collembola as well as smaller Coleoptera and Hemiptera, Symphyla and Pauropoda.

Amongst the vertebrates collected, one chiropteron, *Rhinolophus ruwenzorii* Hill, taken near the type locality, was of special interest since the species was previously represented by the holotype only.

Included among the entomological collecting equipment was a Robinson light trap, used for the first time by a British Museum expedition. It consists of a metal drum with one end removed and replaced by a celluloid cone surmounted by a metal lamp holder, as shown in the figure. The metal lamp holder, originally designed to take an electric light bulb, affords a firm base for a pressure lamp and it was used in this way with considerable success. One of the two Bi-Aladdin paraffin pressure lamps, used in front of the moth screen from dusk, was transferred to the light trap at bedtime and left to run unattended until morning. A tin with a perforated lid, containing cotton wool soaked with tetrachlorethane, was put inside the trap to stupefy the insects coming in and in the morning specimens not required were released and the balance of the night's catch killed in the usual way in a cyanide bottle. A stronger concentration of tetrachlorethane was tried as a killing agent, but it was found to make the insects too brittle to pack without damage.

A preliminary survey of the Heterocera from the 1952 expedition confirms many of the tentative conclusions put forward by Dr. Edwards in his introduction to *Ruwenzori Expedition 1934–5*. The material collected in the Semliki Forest and at Bugoye, where there is an isolated patch of dry forest extending to the bank of the Mubuku river, and at Ibanda in the elephant grass belt, all at elevations below 5000 ft., appears to consist in the main of species with a wide distribution in Africa.

The montane rain forest at the foot of the Nyinabitaba moraine, near the confluence of the Mahoma and Mubuku rivers, was the richest in species of any locality visited. The fauna, though very different from that of the lower elevations, again includes many species with a wide distribution in Africa.

Above the bamboo belt, the remarkable change in the vegetation is reflected in the Heterocera. The completeness of the change is illustrated by the results of the collecting at Nyinabitaba (8650 ft.) in the upper levels of the montane rain forest and at Nyamaleju (10,530 ft.) in the ericaceous belt. The two localities are separated by a bamboo belt of irregular depth and two miles in distance; in seven nights' collecting at the lower locality and six nights' collecting at the higher, only two species of Heterocera, a Lithosiid of the genus *Lophilema* and a Geometrid of the genus *Eupithecia*, appear to be common to both.

From Bigo (11,400 ft.), in the upper levels of the ericaceous belt, to the uppermost limits of the vegetation at about 14,500 ft., there occur a number of species of the Geometrid genus *Xanthorhoe*, which have brachypterous females. Four species have been described from Ruwenzori, and two further undescribed subspecies were taken. Females of three of the four described species were also discovered.

Similar brachypterous developments were noted in two species of Microlepidoptera found in the Stuhlmann Pass; one, a species of Tineid, was found in numbers on the trunks of tree *Senecios*, among the accumulated dead foliage, on which the larvae almost certainly fed.

In numbers of species, Lake Bujuku was by far the poorest of any locality visited. The number of specimens was, however, prodigious; on some evenings, even when conditions were extremely misty, the light screen attracted scores of moths, but invariably they belonged to two species. Only four species of Macro-Heterocera were noted, two species of Geometridae and two of Agrotidae.

Thanks are due to the leader of the expedition, Professor Kennedy, for his unfailing help; no request for materials, porters or transport, however inconvenient to his own plans, was ever refused.

List of Localities

EQUATORIAL RAIN FOREST

Semliki Forest, 2850 ft., 22.viii–3.ix.
Semliki Forest, Hot Springs, 2750 ft., 29.viii–1.ix.

Cultivated Region.
Bundibugyo, 3440 ft., 22.viii–3.ix. Temperatures: Min. 64–67°; Max. 77·5–89°.

SAVANNAH

Isolated Dry Forest.
Bugoye, 4500 ft., 8.viii and 5–10.ix.

ELEPHANT GRASS BELT

Partially Cultivated.
Ibanda, 4700 ft., 4–6.vii, 17–21.viii and 4–12.ix. Temperatures: Min. 57–61°; Max. 81·5–90·5°.

MONTANE RAIN FOREST BELT

Montane Rain Forest Zone.
Mubuku Valley, 5250–6000 ft., 11.viii.
Mahoma River, 6700 ft., 13–16.viii. Temperatures: Min. 54–56°; Max. 63–63·5°.
Mahoma River, 8350 ft., 9.vii.
Mubuku River, 8350 ft., 10.vii.
Nyinabitaba, 8650 ft., 7–13.vii. Temperatures: Min. 45–50°; Max. 54°.

Upper Montane Rain Forest—Lower Bamboo Zones.
Near Nyinabitaba, 8700–9000 ft., 11.vii.
Misigo, 8550 ft., 2–4.viii. Temperatures: Min. 50°; Max. 62·5–64°.

ERICACEOUS BELT

Upper Bamboo—Lower Ericaceous Zones.
Lake Mahoma, 9600 ft., 12.vii.

Ericaceous Zone.
Nyamaleju, 10,530 ft., 14–19.vii. Temperatures: Min. 35·5–39·5°; Max. 54–54·5°.
Balirungi River, 11,200 ft., 1.viii.
Bigo, 11,400 ft., 20–22.vii and 29.vii.
Lamia Valley, 11,900 ft., 30–31.vii. Temperatures: Min. 36·5–37·5°; Max. 58°.
Kimemba Camp, 11,900 ft., 1.viii. Temperature: Min. 37·5°.

ALPINE BELT

Bujuku River, 12,000–12,550 ft., 25 and 29.vii.
Portal River, 12,250–12,550 ft., 30.vii.
Bukurungu River, 12,550 ft., 29–30.vii. Temperature: Min. 29·5°.
Lake Bujuku, 13,050 ft., 22–28.vii. Temperatures: Min. 29·5–36°; Max. 46·5–55°.
Stuhlmann Pass, 13,500 ft., 27.vii.
Mount Stanley, 14,500 ft., 26.vii.

Berlese Funnel for collecting small soil-inhabiting arthropods. The Paraffin Pressure Radiator is used to desiccate the soil and moss samples

Robinson Light Trap for collecting nocturnal insects

MADE AND PRINTED IN GREAT BRITAIN BY
WILLIAM CLOWES AND SONS, LIMITED
LONDON AND BECCLES