

The Ethiopian Flora Project 1980 – 2009

Exploration, collaboration, inspiration

Dedicated to
OLOV HEDBERG

Edited by Inga Hedberg and Eva Persson



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Passing on the torch after 30 years of Flora work – a personal view

Mesfin Tadesse

Mesfin Tadesse, 2011. *Passing on the torch after 30 years of Flora work – a personal view.* – Acta Univ. Ups. Symb. Bot. Ups. 35:2, 217–227. Uppsala. ISBN 978-91-554-8226-8.

Starting with experiences that led the author to devote his life to botany, this article is an attempt to elucidate the enthusiasm of a number of botanists who have directly or indirectly contributed to the Ethiopian Flora Project, from collecting specimens to motivating many of the people that are now supporting it. A few of the circumstances that led to the writing of the Ethiopian Flora, from the perspective of the present author, are discussed. The contributions by two prominent expatriates are highlighted by glimpses from their personal experiences. It is shown that all of these factors have been instrumental in setting up and staffing the home base of the project at Addis Ababa University in the National Herbarium of Ethiopia. It is anticipated that the torch that was lit in the twentieth century will continue to shine in the twenty-first.

Key words: Ethiopian Flora Project, Elizabeth Gilbert, William Burger.

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Introduction

In 1962, our esteemed colleague, the late Mr. Jan Gillett, wrote the following note to Dr Herbert F. Mooney, botanist and founder of the National Herbarium of Ethiopia (ETH), upon hearing of his appointment as “Professor” at Haile Selassie I University (HSIU): “Congratulations on your professorship! Just as the Athenians had an altar to the ‘unknown God’, so evidently the Ethiopians have a Professorship in ‘the unknown subject’ ...” (Mesfin Tadesse 1991). ‘Unknown subject!’ – that is no longer the case today, thanks to the efforts of a large number of people who have kindled the torch and passed it on to others. Today we have many professors in the unit for which Dr Mooney is gratefully remembered. A list of directors/keepers of the National Herbarium is given in Table 1.

In the following pages I will present to you what this means to me, as an individual, and probably also to my colleagues and others, as representatives of an institution that has become the focal point of so much work for the last 30 years. I will begin by giving an overview of the circumstances that led me to land in this discipline and then I will mention the activities of two contributors that have not been addressed before in any of the reports on the development of the National Herbarium of Ethiopia. My intention is to highlight points that have determined

Table 1. Chronological list of directors/keepers of the National Herbarium of Ethiopia.

Dr Herbert F. Mooney, Ph.D. (Trinity College, Dublin, Ireland) Founder and first director	1959–1964 (intermittently)
Dr Edward E. Beals, Ph.D. (University of Wisconsin, U.S.A.)	?1964–1965
Dr Elizabeth F. Gilbert, Ph.D. (Ohio State University, U.S.A.)	1965–1968
Mr. Michael E. Gilbert, M.Sc. (University of Liverpool, U.K.)	1968–1976
Dr Mesfin Tadesse, Ph.D. (Uppsala University, Sweden)	1976–1980 & 1984–1993
Dr Tewolde Berhan Gebre Egziabher, Ph.D. (University of Bangor, Wales, U.K.)	1980–1984 & 1993–1996
Dr Sebsebe Demissew, Ph.D. (Uppsala University, Sweden)	1996 to present

my fate as a field botanist and to recognize those individuals that have shaped my fate and those of many others.

Early years at school

Like many young and aspiring children in Ethiopia, my intention when I grew up was to become a medical doctor. In junior high school, I was even addressing myself – on class reports and exercise books – as “Dr Mesfin”. I still remember the comment “Not Yet”, made by my grade ten chemistry teacher, an American Peace-Corp volunteer. That was the only profession, the profession of the medical doctor, I knew at that time.

As an elementary school student at Amha Desta School, in Addis Ababa, I vividly remember the impression that my grade five science teacher, Ato Yohannes Tadesse, made on me. Ato Yohannes was a unique teacher, for it was at this young and tender age that I was introduced to field work. During this period, taking students to nearby mountains and river valleys to study organisms in their natural settings must have been considered risky and adventurous: risky in taking young children out of the school compound and into treacherous environments; adventurous in gambling with the lives of vulnerable children, although, I assume now, he might have secured the permission of our parents. The longest field trip was from Amha Desta School, located at the foothills of the Entoto Mountains, to the foothills of the Menagesha Mountain State Forest, some 25 kilometers west of Addis Ababa on the Addis-Ambo road.

Ato Yohannes Tadesse instilled in me a love for nature, as he probably did in many other children too. For each unique organism, or sample of an organism, that students would collect and bring to class, he would give a point, in the form of a circle. Another circle around the first one would denote two points, still another one around the second circle would denote three points, etc. When added up, the number of concentric circles counted significantly towards our final scores in science in grade five (1953 Ethiopian calendar; 1960 G.C.). A chart with all the

names of the students, with their scores in concentric rings, posted next to the chalk board, added to our desire to bring in more unique specimens. This was probably a deliberate strategy of Ato Yohannes to encourage healthy competition between us.

One of the unique specimens that I took to class was a branch of a tree with many small prickles. The tree was growing in a compound of a rich person that lived in my neighbourhood. Some branches of the tree were sticking out of the stone wall around the house and were reachable only by climbing up on the perimeter wall. Days had passed since I noticed the tree as being unique, but the idea of taking a sample did not occur to me until one morning when I climbed the stone wall, broke a piece of the branch, placed it in my school bag and then delivered it to Ato Yohannes. I still remember the surprise and the raised eyebrows of my teacher as none of the students had brought that kind of plant before. The tree turned out to be *Erythrina brucei*, a native species and one of many Ethiopian endemics. I am not sure how much this played in my later being a botanist, but it seems to have left an ineffaceable impression about plants somewhere in my subconscious mind. I saw the tree again many years later still standing in the same place.

Science in college

In the first few months of my first year in college, I vacillated between the pre-medicine and pharmacy programs. I took the pre-medical courses for two years but I finally landed in biology. The volatile situation in the country probably played a big role in my decision, my aim being not to dwell too long within a disturbed environment. It was probably this same feeling that made me carry out the field aspect of my final research project a year ahead of time during my 'service year', then dubbed as Ethiopian University Service (EUS). All university students, who had completed three years of college education, were required to live in the countryside, and either teach at various schools or work for governmental institutions. This program was conceived in response to the desire of many of the enlightened students of the day to contribute to the development of the country. The proposal that initiated this program was "first submitted to the HSIU president in 1961 by Mesfin Wolde-Mariam, then head of the Department of Geography, ..." and adopted in 1964 (Rønning Balsvik 2005). Prof. Mesfin Wolde Mariam is still socially and politically active and he is one of the enduring voices of reason in Ethiopia today.

I was assigned to teach Science at Ambo high school in the academic year of 1971–1972. Sometime in the middle of my assignment there, I met Dr Tewolde Berhan Gebre Egziabher and Ms Sue Edwards in the compound of Ambo Ras Hotel. Dr Tewolde had given a course in general ecology in my third year in college and I then approached him about the possibility of starting the field compo-

ment of my final year research project while I was in Ambo. He agreed to the idea and said he would have to come back on another weekend to get me started.

This was probably the moment that hooked me on to plants more than ever before. I began to enjoy going out to the countryside around the town of Ambo, exploring and appreciating nature, collecting plant and soil samples for my anticipated future work. I even decided to call off my Christmas break, and stayed in Ambo to collect plants and soil when all of my EUS friends had gone to visit family and friends in Addis or elsewhere. I had the whole five-bedroom house to myself, spreading soil samples on the hard wood floor on newspapers and in brown bags to dry in the air.

Upon completing the college courses satisfactorily in June 1973, I was retained by the Haile Selassie I University (later Addis Ababa University, AAU) to serve as a graduate assistant with a promissory note that I would be sent abroad for further studies. This was done because at that time graduates were few and many governmental institutions were competing to employ them. Although I had the option of joining the Institute of Agricultural Research at Holleta, which came up with a different promise, i.e., scholarship after one year of service, free housing, and free transportation to and from Holleta from Addis, I chose to stay in AAU. This brought me in contact with Mr. Michael Gilbert, then Director of the University Herbarium (see Table 1). I was assigned to assist in his botanical classes, and contributed, int. al., "A key to the trees and shrubs in Arat Killo Campus". A little over a year later, the University offered me a scholarship and I was sent to study botany/ecology at the University of Minnesota in the United States.

I should note that prior to this, the University had sent me and my colleague, Aberra Mogessie from the Geology Department, to the British Council to be interviewed for a British Government scholarship. A few days later we were summoned and told that we had failed the interviews. One question that I was asked by the interviewer that I still remember was "What is the significance of studying Plant Taxonomy to these people?" – pointing to the people passing by outside of the second floor office of the British Council building located in the center of the Piazza. In spite of the feeling of the inappropriateness of the question, I attempted to explain what that discipline would do for the country, but obviously without success. Little did the interviewer understand what this discipline would do for the country he was supposed to help.

Graduate education

Although the University of Minnesota is far from the tropics, the courses I took there and the research I conducted provided me with the knowledge I needed to do meaningful work in botany and ecology anywhere in the world. However, while there I also developed a strong yearning for tropical botany. In the library of the University of Minnesota, I saw an impressive number of Floras, for example, *The Flora of Minnesota* and *The Flora of Missouri*, and this kindled a strong de-

sire to write a Flora of Ethiopia, as I had not seen one when I was trying to identify the plants I had collected in Ambo. Incidentally, many of the specimens I collected in Ambo in 1971–1972 had to be identified to the level of genus or family only, since the only available book to identify Ethiopian plants was Dr William Burger's *Families of Flowering Plants in Ethiopia* (Burger 1967), which I will discuss below.

In June 1976, after nearly two years of course work and research at the University of Minnesota, I was offered a scholarship to be a part of the group that was working on the *Flora of Ceylon* and/or the *Flora of Hawaii* with Drs H. F. Fosberg and D. Nicholson of the Smithsonian Institution, which would result in a Ph.D. degree in botany. Soon after, however, I received a letter from the re-opened and re-named Addis Ababa University (formerly Haile Selassie I University) stating that it would like to have all of its scholarship students return as soon as possible, in response to what was then referred to as "the Call of the Motherland" to all educated citizens of the country. Hence, I returned to Addis Ababa in July, 1976.

However, before returning to Ethiopia, I wrote a letter to Dr W. Burger (Fig. 1), formerly associated with the Imperial Agricultural College at Harar (now Alemaya University), an important contributor to the development of botany in Ethiopia, expressing my interest in furthering his work (see above) and soliciting support in the future, but did not receive a reply. I later found out that Dr Burger had already moved to Chicago.

I subsequently met him in 1995, when I visited the Field Museum of Natural History in Chicago, and briefed him about the Flora project.

Ethiopia in the mid-1970's

The country I returned to in 1976, with my intense zeal to initiate world class work on its flora, was in a state of political despair. Most of the people I met had changed psychologically. There was either revolt or apathy everywhere. Teaching in AAU then was not encouraging. Although I had seen the beginnings of the unrest in 1974, I had not expected that things would go so wrong for so many Ethiopians in so short a time, particularly for the elite and the educated citizens. During 1976–1978 the country lost thousands of its best and brightest.

Seeing that the possibility of field work at that moment was a futile and costly exercise and with no other option, I decided to immerse myself in studying the collection of the Addis Ababa University Herbarium. I processed previously collected specimens with the help of students from the Biology Department of AAU, negotiated with my department for the employment and retention of new graduates, and gathered literature that would help in realizing my dream of producing a Flora of Ethiopia besides teaching some courses in botany. At times I would go out with botany students to nearby areas in and around Addis Ababa to collect plants, but there were many times when these ventures proved to be too risky due to the

prevailing political tension within the city. Having a stubborn mind, and setting out to do something that had not been attempted before in the country, I was unwilling to accept the prevailing situation. The Department of Biology, particularly through its Head at the time, Dr Shibru Tedla, was highly instrumental in creating possibilities to further my ambitions. He made it easy for me to get small grants to purchase herbarium supplies and cabinets locally, employ students as part-time workers, and hire secretaries on a part-time basis. He also made it a point to retain three of the graduates, Zerihun Woldu and Sebsebe Demissew (1977) and Ensermu Kelbessa (1978), to be associated with the Herbarium. Things began to calm down in Ethiopia around the end of 1978 and I was able to focus on my dream.

The Flora Project

With funding from the Swedish Agency for Research Cooperation with Developing Countries (SAREC) the Ethiopian Flora project was launched in 1980. Several reports on the preparations for the project have been published, e.g., I. Hedberg 1986, Tewolde Berhan 1991. However, I would like to particularly mention some circumstances and persons that have not been given due attention in the existing written reports.

One circumstance that I believe has contributed to our success in securing funding from SAREC happened at a meeting with authorities from the newly established Ethiopian Science and Technology Commission (ESTC) and Addis Ababa University, which had submitted project proposals. A number of people were gathered in the University Senate Hall for a face-to-face discussion with the authorities and a representative from SAREC. Dr Tewolde and I attended in order to secure funding for the Flora project. We soon found that our proposal had been listed towards the end of the day's events, signifying that it had been given least support by the joint committee overseeing proposals. The officials from ESTC, AAU and SAREC were not able to finalize the discussion and review process in a single day and requested another session on the following day. The next day, however, was a Muslim holiday. Since the University had begun closing on all official holidays, after the revolution of 1974, no one expressed an interest to come and solicit support for their project proposals except Dr Tewolde and myself. The SAREC official, along with a few other officials from ESTC and AAU, decided to meet with us and discuss our proposal, not in the University Senate Hall but at the National Herbarium. On that fateful day, we were able to show how much work had been done by both resident and expatriate staff of the Herbarium, and highlight the number of our contacts and collaborators, particularly in Sweden and Denmark. They were also able to see the large amount of collecting equipment kept in the Herbarium by the Danish Botanical Expedition, headed by Ib Friis. The fact that we were able to have ample time and space to interact with the officials on that day sealed our fate and our project was under way. The

SAREC official sent a telegram to Prof. Olov Hedberg, then in Tanzania, asking him to make a stop over in Addis on his way to Sweden to discuss the proposal, informing him that the project would be given high priority (personal communication: Inga Hedberg). And soon we learnt that our project was accepted.

Ethiopian Flora compilers

Probably the first Ethiopians to compile checklists of Ethiopian plants, based in Institutions, were the late Wolde Michael Kelecha starting in 1953 and Dr Amare Getahun starting around 1961 (Amare Getahun 1974). Wolde Michael wrote "I began collection of vernacular names of Ethiopian plants in 1953 after I had graduated from the Ambo Agricultural Institute (then Ambo Agricultural High School) ... As a Head of Forestry and Wildlife Department of Ethiopia for many years, I made many extensive trips to almost all parts of the country and collected most of the vernacular names and became more familiar with [the] Ethiopian Flora." He does not mention, however, whether he had also travelled and collected plants with H. F. Mooney, who started his field work in Ethiopia at about the same time. Neither does Mooney shed any light on the matter, mentioning Amare Getahun (as Ato Getahun, page v, Mooney 1963) and Tekle-Hawariat Hagos, as the only Ethiopians he had worked with (Mesfin Tadesse 1991).

Although Wolde-Michael was active until the mid-1980's, he was consumed with administrative duties within the Forestry Department of the Ministry of Agriculture and later on at World Vision International. Only after retirement was he able to produce his revised and enlarged fourth edition of *A Glossary of Ethiopian Plant Names* (Wolde-Michael Kelecha 1987).

The next person who set out to document the flora of Ethiopia was Dr Tadesse Ebba (personal communication, August 1976). Dr Tadesse Ebba helped to initiate the Plant Genetic Resources Center of Ethiopia (now Institute of Biodiversity Center) in May 1976, with support from the German government (see also http://www.ibc_et.org/). Dr Tadesse Ebba became the chairperson of the Ethiopian flora *ad-hoc* committee but, unfortunately, he did not stay in Ethiopia long enough to realize his dream of producing a Flora of Ethiopia.

When, in July 1976 at Addis Ababa University, I joined the Ethiopian flora *ad-hoc* committee, (Tewolde Berhan 1991) I was made secretary of the committee. This committee was, however, unable to show progress during 1976 to 1980 because that was a politically difficult period.

Notable contributors in the 1960's

Elizabeth F. Gilbert

Dr Elizabeth Gilbert (Ph.D.), who worked in Ethiopia between 1966 and 1968, was one of the early directors of the National Herbarium in Ethiopia. She now lives in Dorset, Vermont, U.S.A. She travelled widely to collect plants, int. al., to such remote places as Maji in southern Keffa where there were no roads at that time. Her unique collections and field notes particularly of wild or semi-wild Arabica coffee from Maji and from the Boma plateau of the southeastern corner of Sudan are quite impressive. Several times she flew in small Ethiopian Airline planes to Mizan Teferi, where she would be picked up by her missionary friends and would travel to all the surrounding areas with a four-wheel drive. The following is the story she told me when we met in 2003.

"Most of my activities in regard to the Herbarium consisted of collecting, particularly in the southwest of Ethiopia. My ability to get into that area arose from my friendship with several American Presbyterian Missionaries. I wanted to learn as much Amharic, and as much about Ethiopia, its people[s] and its history, as possible and I found that several of the missionaries of the American Mission were also truly interested in the Ethiopian people. They could speak Amharic and helped me communicate with [the] Ethiopians I met. Eventually I was invited to visit two mission stations in the southwest: Gatcheb (Bensch people) and Maji. I went to Gatcheb several times, by courtesy of Miss Dorothy Rankin, who became interested in the ferns of the region. She made several collections of ferns, which I took care of, sending some to Kew and some to Addis. Eventually, Miss Rankin became more interested in orchids and, around her home in Gatcheb, she established dozens in the trees and grounds. At both Maji and Gatcheb, I went for walks in the area, collecting specimens for Addis, Kew and other herbaria. At Maji, there was an interesting area near a hydroelectric power generator where I collected a *Lobelia* that Kew thought might be a bit unusual. At Maji also, there were cycads¹ [*sic!*], more than I remember seeing elsewhere. At Gatcheb, Miss Rankin took me up the mountain more than once. I was impressed with her ability to get along with the local people so well and I know that it was only through her and Miss Nichol at Maji that I was able to visit and collect in these areas.

One incident in Addis comes to mind: I received a letter from Kew saying that a plant had been collected in Addis years before and that it seemed to be a new species. The specimen unfortunately did not have any fruits. One of their botanists would soon be visiting Ethiopia and it was hoped that I could take him to the site and perhaps find the plant and its fruit. The directions to the site on the Kew Herbarium label were so complete that I had no trouble finding the place (above a certain stream, above an old embassy). We went to the site and within a few minutes found the plant still growing there and with fruits.

¹ By this Dr. Gilbert probably meant the wild date palm (*Phoenix reclinata* Jacq.), a plant with a similar habit as a cycad and the only native species of the Palm family in the area.

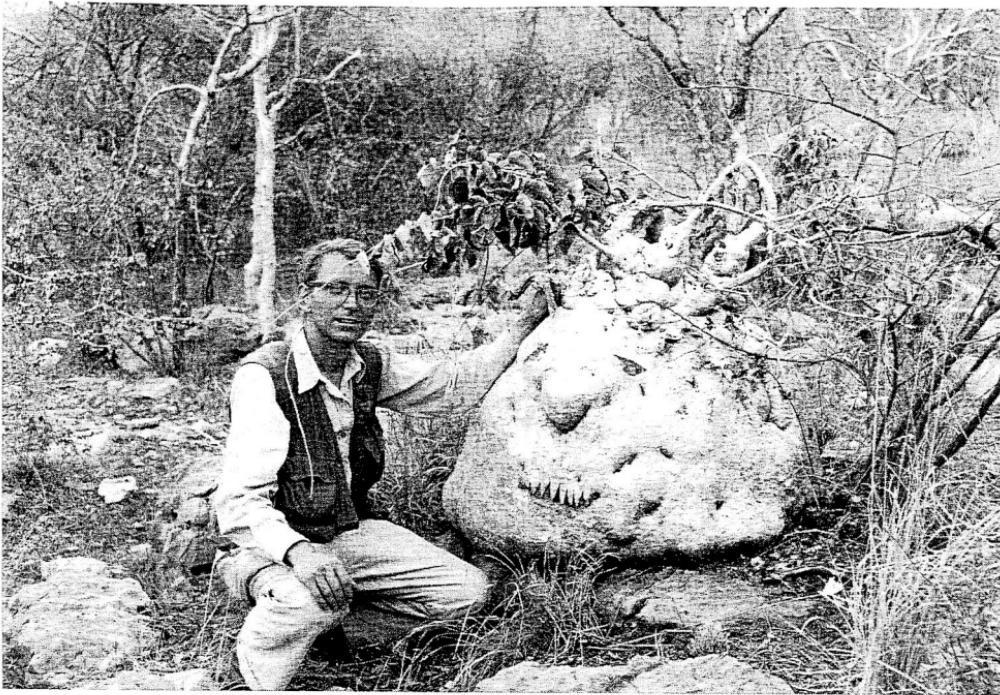


Figure 1. William Burger with *Pyrenacantha malvifolia* Engl. Daletti, c. 90 km south of Harar, 7 August 1963. (Courtesy of Dr. W. Burger, Chicago, Illinois, 1995)

Thanks to the chairman of the Biology Department at the time, Dr Brian Wood, biology majors were required to go on field trips with us on occasional weekends. The most interesting to me were the ones to Boro Luco, above Asella. Here I first met *Podocarpus* forests. One of the foresters thought that by 1980, all the *Podocarpus* of Ethiopia would be gone. However, in the 1980's, I was fortunate to see some in southeastern Ethiopia, in the mountains on the way to Robi."

Dr Gilbert kept her contacts with her successor, Mr. M. G. Gilbert, and the Wildlife Society of Ethiopia. She also produced a publication on Mt. Wachacha located in western Shewa (Gilbert 1970).

William C. Burger

One of the books that had a great impact on my idea of writing the Flora of Ethiopia in the 1970's was *Families of Flowering Plants in Ethiopia* by William C. Burger (1967).

William Burger (Ph.D., Fig. 1), who worked in Ethiopia from 1961 to 1965, was born in New York City in 1932 and resided there until receiving his B.A. degree from Columbia College in 1953. After serving in the U.S. Army in France and Germany (1954–1955), he began his graduate studies in Botany at Cornell University (M.Sc. 1959) and completed his graduate training as a student of

Robert Woodson at Washington University and the Missouri Botanical Garden (Ph.D. 1961). While at St. Louis he learned of the Oklahoma State University program in Ethiopia and joined their staff at the [Imperial] College of Agriculture and Mechanical Arts (now Alemaya University) in July 1961.

At the College, Burger gave lectures and laboratory courses in Genetics, Plant Physiology, Plant Taxonomy and Plant Anatomy. Unencumbered by wife or children, and having purchased an old but reliable Willys Jeep, he had the freedom to go on collecting trips whenever classes were not in session. Using students as guides and assistants he was able to collect over a wide array of habitats in eastern Ethiopia, from the open grasslands of the Rift Valley and the *Acacia-Commiphora* woodlands of the Ogaden slope to the evergreen forests and subalpine formations of the Chercher highlands.

During his time in Ethiopia, Burger made over 3,500 collections (Fig. 1). Almost all the collections are from Hararge Province (now Harar), with only two short trips to western and southern Ethiopia. Primary sets of specimens were deposited at Kew (K), the University Herbarium at Addis Ababa (ETH) and the [Imperial] Agricultural College at Alemaya (ACD). Smaller sets were sent to Nairobi (EA) and the U.S. National Museum (US). Before leaving Ethiopia in July 1965, Burger completed the illustrations and the text for his introductory book, (Burger 1967, see above).

It is interesting to learn about his impression from his stay in Alemaya: "It is difficult to relate to others what a wonderful experience we had at Alemaya. The staff were, nearly all, oriented toward agriculture and helping people. This was a very different environment from the "elite" universities I had attended, where the practical business of trying to improve people's lives was hardly ever even discussed. Working with the staff from Oklahoma State University and the Ethiopian administrators, [staff] and students was a pleasure. We all felt we had a noble cause: helping all Ethiopians by teaching the scientific methodology that is the basis for modern agriculture. But we also gained a deep appreciation for traditional farming techniques and the local crops as well; after all, they had proven themselves over a thousand years. In addition, the variety of Ethiopian languages and cultures in the surrounding areas impressed us all."

Conclusion

In conclusion, when compared to other Floras, the Ethiopian Flora was written and successfully completed within, for a tropical Flora, an unusually short period of time, approximately 30 years. The herbarium has grown many times; a library with good reference materials has been established; and above all, the expertise and the personnel needed for continuing the work and embarking on newer projects have been instituted. The spark that started the first fire of Plant Systematics in the 1970's, has lit many more fires of Plant Biology in Ethiopia in the 21st cen-

tury. It is my hope that the torch that has been passed on from our predecessors will continue to shine and broaden the scope of Plant Biology in the future.

Acknowledgements

Congratulations for the successful completion of the Flora project. Thank you, Inga, for organizing this symposium. I wish I could have been with you to celebrate this day but fate has kept me away and continues to keep me away from the job that I like to do most.

In remembrance of Olle Hedberg and my childhood friends, Aklilu Hiruy and Fikru Hiruy, victims of the "Red Terror" in Ethiopia in the mid 1970's.

The linguist, Dr Michael Broe of Ohio State University, read and commented on the final draft, for which I am grateful.

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