Report from Hong Kong

Dr. Shiu-Ying Hu, Botanist at the Arnold Arboretum, has made three trips to Hong Kong since January 1968. Her first stay was from March through June 1968; after a summer in the United States, she returned there for the academic year 1968–69; she left Boston again this past September for her third visit. In return for financial support for her living expenses and field work, Dr. Hu has taught a class in Taxonomy of Angiosperms at Chung Chi College, a part of the Chinese University of Hong Kong. The Chinese University is a federation of three colleges in which the principal language of instruction is Chinese. The Chung Chi campus is located near Sha Tin in the New Territories. Dr. Hu has also made extensive herbarium collections of native plants. This report summarizes her activities during her second trip, including her short stops in Korea and Japan where she investigated species of daylilies under the sponsorship of the American Hemerocallis Society — Ed.

Field work and botanical collections. People who have read or heard about Hong Kong from reports of tourists who visited the congested shopping areas, or from missionaries who discussed the conditions of refugee life, have the impression that Hong Kong is a small piece of land overcrowded with buildings and people. This is an untrue picture. Actually, 95% of the land area controlled by the Hong Kong government is wilderness. It is true that certain historical collecting sites, such as Captain Champion's Happy Valley, are crowded with apartment buildings, but the vast area is still botanically unexplored. A map issued in 1968 by the Crown Lands & Survey Office of Hong Kong indicates that the built-up areas are limited to the north side of Hong Kong proper (Victoria Island), Kowloon Peninsula, and very small areas in the New Territories. The primary reason for the lack of development in Hong Kong is water supply. Now the Jubilee Reservoir, the Tai Lam Chung Reservoir, and the Kowloon Reservoir have been built in the New Territories, and Plover Cove has been converted into a fresh water lake. These will provide water for a population shift to the New Territories. The huge Shek Pik Reservoir is on Lantau Island, the largest island in the Hong Kong area. (See map, p. 16–17.)

When I left Hong Kong in June 1968, my collecting record ended with number 5551. During the summer T. K. Woo col-
lected twenty sets of specimens. On my return to Chung Chi College in September, I began my collections with number 5572; when I left this June (1969), the last number was 7791. During this period I collected approximately 2250 sets of specimens.

Field work in the tropics is strenuous but always exciting. The combination of available water and good roads makes Hong Kong a plant collector's paradise in southeast Asia. The most memorable of my trips were (1) the visit to the type tree of *Camellia granthamiana* Sealy behind the Jubilee Reservoir, on Tai Mo Shan, and (2) the rediscovery of *Manglietia fordiana* Oliver on Ma On Shan.

When Sealy described *Camellia granthamiana*, he remarked, "It was . . . a shock to find that a specimen collected in the New Territory . . . in October 1955 . . . represented a new and very distinct species of *Camellia* — especially as it is a striking plant with white flowers 5½ inches across and handsome, shining bullate leaves. How such a plant can have remained undiscovered until now is a mystery, . . ." ¹ To find the cause of the mystery, to see the plant, and to collect some specimens for our herbaria, I participated in a field trip with the Hong Kong Natural History Society on November 4th, 1968. The area is remote from any path. There was only one man in the group who knew the exact locality of the tree. It is no mystery that the species remained hidden so long in this wilderness! The interesting thing about the occurrence of the species is that, after extensive field work and a thorough survey of the adjoining area, no other *C. granthamiana* was found. So, up

¹ Sealy quoted from a letter from R. E. Dean, Superintendent of the Gardens Division, Hong Kong, as follows:

"You will be interested to know that only one plant, a small tree about 10 ft. high, has so far been found. It is growing in partial shade, on the edge of a wooded ravine, in company with *Ilex rotunda* (20 feet tall), *Caesalpinia* spp. (climbing), *Adina* spp. (5–6 feet tall), and grass about 5 feet tall. It is a multibranched tree, with a base diameter of a little over 12 inches. There is strong reason to believe that it was cut to within a foot or so of the ground a long time ago.

"Its age is difficult to determine, but it is probably between fifty and seventy years. No other similar plants have been found growing within a radius of a hundred yards of this particular specimen . . .

"The area concerned is very remote, and is served only by a narrow track; it is a good one and a half hours' hike from the road. In the ordinary course of events it is certain that the spot is hardly ever visited, except by an occasional forester or villager; the forester who told us about it had no particular business in the area and came upon it quite by chance. It is quite likely that it has hitherto been passed off as a *Gordonia*." (Journal of the Royal Horticultural Society, LXXXI: 181–182, April 1956.)
to the present, the species is known only from the type plant. The species was described on the basis of two herbarium specimens; they are both in the herbarium of the Royal Botanic Gardens at Kew. The specimens which I collected are from the type plant and have both flowers and fruit. (Fig. 1, p. 11)

*Manglietia fordiana* Oliver was described from a specimen collected on Victoria Island and it was known from the type tree only. Our herbarium has no specimen of this species. Oliver remarked that *M. fordiana* was the first record of the genus from China. In the 1930's Dandy described over a dozen species of the genus from China, Thailand, and Indochina. Later H. H. Hu and his associates described another half dozen species from the Chinese provinces of Yunnan and Szechuan. However, *M. fordiana* has only been recorded from Hong Kong. During the Japanese occupation of Hong Kong the area was very short of fuel, and *M. fordiana*, together with other plants, was cut for firewood. On the afternoon of May 11, 1969, when my assistant T. K. Woo and I were looking for a shortcut to return to Chung Chi College from the top of Ma On Shan, I suddenly spotted a tree with deep green leaves and large white flowers on the other side of a deep gorge. Ting Kwok suggested that we wait until another trip to collect it, but I insisted on seeing if I had found another tree of *Camellia granthamiana*. When we saw the tree up close, I thought it was a *Magnolia* because the luster of its leaves and the size of the flowers remind one of *Magnolia grandiflora*; but it is more beautiful because the anthers are a brilliant red. Returning to the laboratory, I keyed the specimen out to be *Manglietia fordiana*. Mr. H. C. Tang told me that *M. fordiana* had not been found anywhere except at Victoria Peak, and that the tree was lost in the war. Consequently, I convinced the horticulturist and landscape designer of the Chinese University of the importance and beauty of this species, and he sent three of his men to air-layer thirty plants for planting in the new University campus and for distribution.

In November 1968 and February 1969 I made two collecting trips to Lantau, the largest island in the area; it is about one and two-thirds larger than Victoria Island. It has a very complicated geological formation, with granite, porphyry, marine silt, syenite, alluvial deposits, and sandstone all occurring in an area of less than fifty square miles. Until recently, the people of the island lived only on small alluvial plains where agriculture was possible. Not long ago, however, roads were built, and a very large reservoir was constructed at Shek Pik. Comfortable modern buildings with very reasonable rates have been built by the Methodist Mission and the YMCA. Buses and vans transport
people across the island. These facilities help a botanist reach areas that have never been botanized.

All the students in my class in the Taxonomy of Angiosperms went along on the February trip. We worked for three solid days in various localities on Lantau Island. Before we went, two student volunteers did research on the geographical conditions of the island, including the population, towns, roads, transportation facilities, and vegetation. Their reports were mimeographed and distributed to their fellow students. The seventeen students were divided into four field groups: (1) covering the cultivated areas and the market place, emphasizing the economic plants; (2) covering the mid-high altitudes; (3) speed climbers who collected high altitude specimens; and (4) covering the seashore and cliff plants. We chose three centers: at the eastern end of the island for the first day, at the southwestern end for the second day, and the peak on the northern side for the third day. The students were very enthusiastic about the work. They began the day with the whistle at 6:00 a.m. and ended it when they finished writing their field notes and pressing their material.

My collection ran up to 170 numbers. The high altitude group collected much more than I did because there were three students in addition to T. K. Woo. The other groups collected fewer specimens. Some of the material collected by the high altitude group was indeed interesting. T. K. Woo built a charcoal heater, but that was insufficient for drying our specimens. The Biology Department at Chung Chi College built a very good drying case which is normally adequate for quick drying. This time, however, there were too many specimens, and not all of them were properly dried. Chung Chi College keeps one specimen of each collection; the rest are for the Arnold Arboretum.

It should be noted here that Ting Kwok Woo is the gardener of the Biology Department. He is one of the victims of the political upheaval in China. When he was twelve he was told, "You are the son of a landlord. You have no right to an education." He was sent to work on a farm where he nearly starved. He told me that he was so hungry that he ate the thick rhizome of Cibotium barometz. When he became older, he escaped by crossing the barbed wire fence. He is now twenty-one and works during the day while attending night school for a middle school diploma; at present, he is in the second form of junior high school. He is very good at climbing and collecting. He can climb a tree like a monkey. I was indeed fortunate to have him as an assistant on some of my field trips.

The biology students at Chung Chi College carry very heavy loads. They have five or six laboratories every week. Many of
them have to tutor special high school pupils to earn some spending money. For these reasons, the biology majors have not organized as many field trips as the geography majors. I made some of my best collecting trips with geography majors or with the staff of the Geography Department. The outstanding ones were (1) the trip to Ping Chau, (2) the Castle Peak hike, (3) the Pak Sin Ling climb, and (4) the Dragon Pool, Plover Cove collection.

Ping Chau is outside Mirs Bay and about one and a half miles from mainland China. It can be reached only by a large fishing boat. Normally, the coast and the possible danger prevent students from going there to study the special geological formations and vegetation of the island. In order to lower the cost for the students, the organizer gathered sixty-four people for the trip, and one of them weighed 300 pounds! On our return we were stopped by a police boat, and the owner of the boat was arrested because his boat was licensed for only thirty-five people. I had a very good collection from that island, which had never been botanized before.

The Castle Peak hike introduced me to a completely different vegetation. On this trip I made my only collections of Nepenthes
and Platycodon. It was a long day, and we did not return to the college until midnight.

Pak Sin Ling is a mountain chain with eight peaks. Two of the five students on this trip were track stars. The group planned to cover all eight peaks. They ate and drank very little. The climbing was rather strenuous for me, and my collecting must have delayed the students. They did not climb all the peaks because, by three o'clock, we saw eight fires starting from various directions. We were afraid of being trapped by the fire, so we decided to change our direction and turned south.

Dragon Pool, inland from Plover Cove, is indeed a collector's paradise. In this area I collected a specimen of the monotypic genus, Lysidice rhodostegia Hance. This species has never been reported previously from Hong Kong. I also collected Buxus, Illicium, and several orchids which I have not seen elsewhere. On this trip, as on several others, Peter Cheung, a geography major who is interested in plants, was my guide.

Dr. L. Trott teaches a course in ecology in the Biology Department. He generally has each of his students choose a special project. He specializes in oceanography, but his students may select any subject that interests them. Last year there was one student working on the vegetation of Dog Stomach Valley; one, working on the ecology of fresh water fish, needed to know the vegetation surrounding the pond; one explored the vegetation of a small railway tunnel; another studied the vegetation of an estuary. These students all guided me to collect specimens which, otherwise, I would have had little opportunity to collect. The most interesting studies concerned the vegetation of the estuary and the railway tunnel. I have a complete collection of the mangrove vegetation.

Dr. Trott has two boats by which he takes students to shores and islands. He was very kind and cooperative in allowing me to make collecting trips with his students. Thanks to him, I have a very good collection of plants from Central Island, a very small, uninhabited island in the middle of Tolo Harbour.

Teaching and lecturing. Biology majors who wish to obtain a British-recognized B.A. degree must take and pass a diploma examination in the Taxonomy of Angiosperms. At Chung Chi College this course consists of two lectures and a three-hour laboratory for two fourteen-week semesters. My class had seventeen people, all in their junior year. The competition for a college education begins at the kindergarten level; children starting kindergarten and first grade must take entrance examinations. All the way through school, they are trained to memorize and
to take and pass examinations; otherwise, they have to stop school at any level. So all my students acquired the ability to perform well on examinations. They also appreciated the method and effort of a teacher who wanted to open their eyes to the structure, beauty, and variations in form of the plants around them, and to the significance of structures in the evolution and classification of plants. I had excellent students and I enjoyed teaching them. However, since I had not taught since 1946 when I came to Harvard for graduate work, I was out of practice and took time for preparation. My three years at Lingnan University as a teaching fellow and my experience in teaching plant taxonomy at West China University contributed to the success of my teaching here.

In January 1969 President C. T. Yung located financial aid to pay the salary of an artist, Teresa Fung. He has also provided a fund for building a drier which helped a great deal in drying the material I collected. The college had one wooden herbarium case before 1968. Now it has seven metal cases for the old collections and its set of my collections. On May 30, 1969, an Australian firm fumigated the herbarium with methyl bromide.

Meetings and conferences. In October 1968 my friend, Mrs. A. T. Roy, came to ask me a favor. She explained to me that some outstanding citizens of Hong Kong who were interested in conservation had asked her to participate in a meeting to be held at the British Council. Since she had a previous engagement for that day, she asked if I could take her place; she felt that my knowledge of the plants of Hong Kong would be of special value in this group. At the gathering I met about a dozen people who were college professors, bankers, businessmen, and a few ladies of society. Subsequently, I was asked to attend monthly meetings to discuss the problems of organizing a Conservancy Society of Hong Kong. This organization was legally established in February 1969.

Hong Kong University organized an international Conference on the Conservation of the Country Side in March 1969. Speakers were invited from England, the United States, and many southeast Asian countries. I participated in the opening tea given by the Governor, all the excursion trips, many lectures, the closing banquet, and I contributed a paper on the Natural Forest of Hong Kong. At the meetings one encountered the small number of British who control agriculture, forestry, fisheries, planning for land utilization, etc., for Hong Kong. There were, by contrast, very few Chinese participants. Because of this conference, I was able to see many places that I would not have
seen otherwise. I collected many interesting plants on the excursion trips. My collecting outfit and my activities attracted many people, including some newsmen. Consequently, my picture appeared in several English and Chinese newspapers. The publicity had a snowball effect. In April and May telephone calls from owners of gardens began to accumulate, and I received invitations to visit many people. Two gardens were of special interest to me. Mrs. Gloria Barretto and her sixteen-year-old son have a beautiful garden on a large hill-top, seaside estate where they have a collection of ninety different kinds of native Hong Kong orchids. She called to tell me when they were in bloom and arranged to show me her garden to see them. The other person I enjoyed visiting was an old fellow who has nine children and a garden of bonsai. He allowed me to take small plant samples. He had many exhibits in the Hong Kong Flower Show last spring.

Visits to Korea and Japan. On the request of Dr. George Darrow, Chairman of the Scientific Committee of the American Hemerocallis Society, with the financial assistance of that Society, and with the approval of the Director of the Arnold Arboretum, I stopped in Korea and Japan on my return trip to investigate species of *Hemerocallis*. I have prepared a report on my activities during these two weeks for the Committee, but there are several items which are also of interest to the Arnold Arboretum.

The time I had was much too short to go into the field to see the wild *Hemerocallis*. In Korea Dr. T. B. Lee, a former student of the Arnold Arboretum and now a professor in the College of Agriculture at the National University of Korea in Suwon, and I took a taxi for field work for a day and a half. This was a very costly procedure. I spent a half day examining and determining the *Hemerocallis* material he collected. In return, he gave me duplicates for our herbarium. In Korea I saw *H. minor* growing in its natural habitat and sent some live material, through the American Embassy Air Service, to Dr. F. Meyer at the National Arboretum. I collected herbarium specimens for the Arnold Arboretum.

In Japan I stopped at Kyushu for two days and worked in the field. I brought back five living plants for the Arnold Arboretum collection of *Hemerocallis* at the Case Estates in Weston. I went to Kyoto and met Professor S. Kitamura, a wonderful administrator and a good botanist. He introduced me to two botanists who accompanied me to the alpine garden at Mt. Rokko and to the botanical gardens at the City University of Osaka and at
Kyoto University. I spent a day in his herbarium examining all the *Hemerocallis* and making sketches of the types and isotypes. I obtained nine live plants and accompanying herbarium material from the Mt. Rokko Alpine Garden; I obtained eighteen more from the Botanical Garden at the City University of Osaka. The Rokko plants are all Japanese species; the Osaka plants are of special value. One of these, *H. exaltata*, was raised from plants transplanted from the type locality. Five others were raised from seed obtained from China (Peking) through exchange. One, *H. fulva*, was introduced to Japan from Nepal. The University of Kyoto Botanical Garden has a small triploid *H. fulva* var. *pauciflora*, the type plant of the variety. I obtained a live plant for the Arnold Arboretum collection. Altogether, I was able to bring back thirty live plants, and I hope that from these the Arboretum will have some good daylily material to offer American gardeners. In the alpine garden I saw American *Symlocarpus foetidus* growing side by side with the Japanese *Lysichiton camtschatensis*. The latter makes a very beautiful rosette, and I thought it would be interesting to have some plants for our meadow at Jamaica Plain. I obtained two small ones which I sent to Mr. Fordham.

In Tokyo I worked in the herbaria of the National Museum and of the Botanical Institute of Tokyo University. Makino, Nakai, Ohwi, and Hara deposited their type specimens of *Hemerocallis* in these herbaria. I examined all the material and took pictures of the types of *H. coreana*, *H. exilis*, *H. littorea*, *H. micranthus*, *H. pedicellata*, *H. sulphurea*, and *H. yezoensis*. My camera was loaded with color film, so the pictures are slides. The photographs and my herbarium specimens will aid our understanding of the original descriptions by Japanese botanists.

In the Botanical Garden at the University of Tokyo I saw a *Hydrangea* with a ball-shaped habit, about 1.5 meters in diameter, covered with shiny, green leaves, and flat panicles of blue flowers surrounded by pink bracts. I have not seen such a beautiful *Hydrangea* anywhere though I have covered most of the trails that E. H. Wilson traveled in Western China. I learned that this cultivar has not been named yet. I was permitted to make cuttings for the Arboretum, and I sent them to Mr. Fordham under the name *Hydrangea* 'Tokyo Delight'.

*In retrospect.* Looking back over my life and work from March 1968 to June 1969, I can conclude with pride that I have been busy and productive. I made four trips over the Pacific and brought back over 2700 herbarium specimens with duplicates, and thirty live plants for the Arnold Arboretum. The 500 odd
numbers of specimens collected in the spring of 1968 were identified that summer. The Herbarium Secretary typed the labels, and about 2000 duplicate specimens were distributed. I worked on identifying the 2200 new collections last summer. In comparing my collections with the named specimens in the combined herbaria, I found that most of them are valuable additions, either of new phases of development or because they represent new records for the area.

My first trip served as an exploration of the problems and possibilities of preparing a modern flora of Hong Kong. During my second trip I made extensive botanical investigations of Hong Kong and the New Territories. From the accompanying map one can see the areas which I covered in the spring of 1968, the fall of 1968, and the spring of 1969. Although, to a tourist, Hong Kong is a small, congested shopping area, to a botanist who wants to investigate its vegetation and botanical resources, it is big, wild, and fascinating. On my numerous trips I have retraced my steps only on two occasions, and then in different seasons. In every locality I visited, there were new things to see and to collect. Some of the material is very localized and hard to find.

I have been puzzled about one problem: the ferns. I examined all the fern collections in the Hong Kong Herbarium in the spring of 1968 and I prepared a key. From this work I formed a good idea of the ferns of Hong Kong. On my trips I tried to collect all the fern species, but I found less than a quarter of the number that was in the herbarium. Naturally, I wonder what
has happened to the ferns in the past one hundred years. There are three or four species which are common, but where are the others?

Regarding the preparation of an illustrated flora, I can report progress in three directions: (1) The collection and identification of specimens form a broad and sound foundation for the flora. (2) By helping a student who is interested in the medicinal plants of Hong Kong, I have accumulated a great deal of information on the economic uses of plants. With my help, Lee Fung Oi has collected over 300 samples from herbalists and has recorded their medicinal properties and methods of use. After I identified her material, the samples were stored in envelopes, with her original notes, in the herbarium of Chung Chi College. All this information will be incorporated into the flora as notes. (3) About 300 illustrations were drawn, each representing one genus. Teresa Fung, the seventeen-year-old artist, is very skillful. My only regret is that I could not spend more time with her to help her with detailed structures and with developing her ability to the fullest extent. The preparation of lecture notes and the care of specimens were more urgent than the supervision of her work. When I could not show her the details of certain genera, I had to ask her to make habit sketches. Consequently, there are many illustrations which I did not allow her to ink because I wanted to make corrections and additions.

Looking towards the future. At a time when the biological sciences swing strongly to cellular and molecular study, to some people it seems out of fashion to talk about a flora of Hong Kong. However, the preparation of a modern illustrated flora has a place — actually, an importance — in botanical research. That the people of Hong Kong feel the need of such a flora has been well expressed by the encouragement and support given to my work by Dr. C. T. Yung, President of Chung Chi College. Actually, a cry for an illustrated flora of Hong Kong was made by the residents forty years ago. In 1928, A. H. Crook, Headmaster of Queen's College, Hong Kong, published some illustrated, popular articles on Hong Kong plants. In 1930, he reprinted these articles in book form and called it The Flowering Plants of Hong Kong (Ranunculaceae to Meliaceae). In a book review in the Hong Kong Naturalist, the reviewer wrote: “It is to be hoped that some one can be found to complete a work so admirably started. There is no doubt that an illustrated . . . flora of this Colony is badly wanted. If Mr. Crook's work could be brought to a successful conclusion it would fill a long felt want.”

SHIU-YING HU