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## IVAN M. JOHNSTON — WESTERN BOTANIST

PHILIP A. MUNZ

The death in June, 1960, of Dr. Ivan Murray Johnston of Harvard University meant for me the end of a friendship that began in 1917 when I arrived at Claremont, California. There I was to find in my botany classes at Pomona College a vigorous and enthusiastic sophomore with the name of Ivan. His long and fruitful botanical career is being duly recorded elsewhere with sequence of events and list of publications. I do not therefore propose a similar biography here, but I do wish to point out that Johnston was in the beginning a western botanist and that, although his many years of activity at Harvard University (1922–1960) gave him a worldwide reputation, particularly for work on plants of Latin America and other areas, his contributions to the botany of the western United States were many and significant.

To begin with, I have known only one other young botanist who had the same instinctive feeling or sense for plant taxonomy as did Ivan. It was almost uncanny. In the field or herbarium he saw a plant as a plant: its color, habit, vesture, shape of individual organs, all as a whole, as one image. He felt it as a unit and could compare it as such with other individual plants in such a way as to recognize it as something apart and with its own characters. My first acquaintance with him was on a four day hiking and camping trip in the San Gabriel Mountains north of Claremont. He had been studying this range for some time and he knew it thoroughly. We had a long hot August climb from about 2,000 feet to over 10,000, carrying our food, utensils, presses and bedding. He was testing out his new instructor who, fresh from graduate work at Cornell University, was learning much from his new pupil about a flora entirely strange. For me the trip was a great success and Ivan and I began a close friendship.

At the end of that academic year, in the spring of 1918, I left Pomona College for some time to enter the Army and in the fall Ivan went to his junior year at the University of California at Berkeley. By that fall he had already published some notes on local plants (*Bull. So. Calif. Acad. Sci.* 17: 63–66, 1918, and later, 18: 18–21, 1919). His first major paper was entitled "The flora of the pine-belt of the San Antonio Mountains of southern California" (*Plant World* 22: 71–90, 105–122, 1919).

Ivan spoke many times of his good fortune in having made the acquaintance of Samuel B. Parish of San Bernardino, later of Berkeley. One of southern California's first resident botanists, Mr. Parish was well acquainted with the local flora and was a man of rare good botanical judgment. He took great interest in his promising young friend and helped him much in his early development. Ivan's mother lived only a few miles east of Claremont (until early 1960 in fact) and during his years at the University of California he made frequent trips home. Often these meant that we could botanize together, often going to the deserts so near at hand or in summers to the nearby mountains. Sometimes Frank W. Peirson and his sister Mabel were along. Always active physically and rapidly developing a broad knowledge of plant groups and characters and problems, Ivan was perhaps the most stimulating member of the party, even though he might be the youngest. He was always very positive and coming to us from the great university where he was influenced particularly by W. A. Setchell and H. M. Hall, he always had something of interest to discuss around the camp fire. Such trips were particularly numerous in the spring of 1922 and in

the summer of 1924. I believe Ivan spent the summer of 1921 on an expedition to the Gulf of California and those of 1919 and 1922 working in the Pike's Peak laboratory of the Carnegie Institution under Dr. F. E. Clements. In the autumn of 1922 he went to the Gray Herbarium of Harvard University to begin his doctoral study under Professor B. L. Robinson.



Photograph taken in May, 1922, at Quail Springs in the present Joshua Tree National Monument, southern Mojave Desert, California. Standing, from left to right, David D. Keck (student at Pomona College), William A. Hilton (professor of zoology at Pomona), Milton Smith (student), Arthur Gilman of Banning, and a student whose name I have forgotten. Seated, from left to right, Philip A. Munz, Ivan M. Johnston, and M. French Gilman (later of Death Valley National Monument).

During his years at Berkeley Ivan had access to the most important western and Californian herbarium and constantly came across specimens that attracted his attention. These combined with the field experience in central and southern California and in Colorado resulted in a number of papers on western botany, such as: "Undescribed plants mostly from Baja California" (*Univ. Calif. Publ. Botan.* 7: 437-446, 1922); "Diagnoses and notes relating to the spermatophytes chiefly of North America" (*Contr. Gray Herb.* 68: 80-104, 1923); and "Expedition of the California Academy of Sciences to the Gulf of California in 1921. The Botany" (*Proc. Calif. Acad. Sci. Ser. iv*, 12: 951-1218, 1924).

Other papers in collaboration with myself were: "The distribution of the southern California Pteridophyta" (Am. Fern J. 12: 69-77, 101-122; 13: 1-7, 1922-1923); "The penstemons of southern California" (Bull. So. Calif. Acad. Sci. 23: 21-40, 1924); "The potentillas of southern California" (Bull. So. Calif. Acad. Sci. 24: 5-25, 1925) and "Miscellaneous plants of southern California" I-IV (Bull. Torrey Botan. Club 49: 31-44, 349-359; 51: 295-302; 52: 221-228, 1922-1925).

I remember that in the spring of 1918 when we first had opportunity to study the California spring flora together, he was much interested in the local species of the genus *Cryptantha* (Boraginaceae). He told me that Mr. Parish had said that he had great courage to develop such an interest. However, from that time on his knowledge of the family grew, through herbarium and field study, and resulted in many papers both on borages of western North America and much farther afield, so that he became recognized as the world authority on this difficult family. Many of his ideas on western North American problems were already pretty well in mind when he left Berkeley and awaited his access to the types and literature available in the East before being published. So we find, beginning in 1923, a series of papers on the family, at first largely on western North American groups: "Restoration of the genus *Hackelia*," "Novelties and new combinations in the genus *Cryptantha*," "A synopsis and redefinition of *Plagiobothrys*" (Contr. Gray Herb. 68: 43-80, 1923) and his doctoral thesis "The North American species of *Cryptantha*" (Contr. Gray Herb. 74: 1-114, 1925). Along with these came a host of papers covering more distant areas or other groups than borages, hence not within the scope of my present remarks. Suffice it to say that Johnston maintained his interest in our borages, remained the authority on the group and wrote it up for most of the recent manuals and floras, particularly for those of the western states. Papers on western borages continued in the *Journal of the Arnold Arboretum* to a fairly recent date.

At the time of his death he was being proposed for a program of research under the Texas Research Foundation and to lead to the preparation of a manual of the flora of Texas. I saw him at the Arnold Arboretum about three weeks before his death and we discussed the matter. It is to me a matter of great regret that this could not have been accomplished.

One of his lines of interest for many years involved the similarity between plants of western and southwestern North America and of southern temperate South America. After receiving his doctorate at Harvard he was awarded a Sheldon fellowship for work in Chile and spent considerable time in 1925-1926 both in the herbarium in Santiago and in the deserts to the north. With this first hand knowledge of plants in both continents he was able to make comparisons, as witnessed by his paper "The floristic significance of shrubs common to North and South American deserts" (J. Arnold Arb. 21: 356-363, 1940).

During the years he also paid considerable attention to the flora of gypsum-bearing soils and after botanizing for a number of seasons in northern Mexico, he wrote a paper entitled "Gypsophily among Mexican desert plants" (J. Arnold Arb. 22: 145-170, 1941). More recently this interest was further developed in similar areas in Texas and resulted in considerable field work there.

I would like to close these brief notes by emphasizing again Ivan Johnston's knowledge of and his contributions to the botany of western American plants. It always amazed me how, after so many years of residence in Massachusetts, when wandering about our botanic garden of California plants, he would recognize them, remember their botanical names and recall peculiar forms that he had seen long before. I would stress too that his knowledge of plant families and of their possible relationships and phylogeny was truly worldwide. I know no other American botanist who approached him in this breadth. It has been my feeling that many European botanists, working at centers like Geneva and Kew, have far surpassed Americans in their comprehension of the world flora as a whole. Johnston probably came nearer their status than any of his American contemporaries.