

# The New Mexico Botanist

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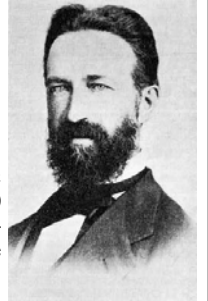
A Newsletter for the flora of New Mexico, from the Range Science Herbarium and Cooperative Extension Service, College of Agriculture and Home Economics, New Mexico State University.

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## François Crépin on Botanizing

by Lloyd H. Shinnery [1918-1971]



[Thanks to Bob Reeves of Las Cruces, we reprint here Lloyd Shinnery's little article from François Crépin (1830-1903). Shinnery's translation was first published in *The Asa Gray Bulletin* (3:65-76. 1955); then reprinted in *Field & Laboratory* (25:65-78. 1957). This is a delightful 1860 primer on field botany. There will be those who find Crépin corny, sentimental, and too saccharine in his descriptions of the joys of field botany. Rather, they should wonder what they are missing.]

Late in the 19th Century the younger Hooker was led to exclaim to some of the botanical students of the day, "You young men do not know your plants!" What would he think of the modern graduate in botany? Now one gets a Ph.D. in the science without knowing most of the plants he encounters every day. Chromosomes, statistics, fancied phylogenies, current fads in morphology and physiology — about such things, like the modern major general, he is "teeming with a lot of news," at least until oral exams are over. If he goes on to teach, it will be to relay the same things, occasionally refurbished, to hordes of freshmen. The general student, though he have no intention or desire to become a professional botanist, must nevertheless master the technicalities of the whole professional field. A simple, direct, spontaneous interest in plants will not do; that is not Science. But to preserve him from extreme specialization, he may be compelled to take "integrated" courses, "progressive education" courses (to what?), or "general education" courses. He must not take up any modest, specific pursuit that he can go ahead with on his own, and that will remain actively a part of his life; such things are old-fashioned.

No one has yet explained clearly just what was so bad about those old-fashioned ways. Amateur naturalists of the past century contributed heavily to the great research collections in our museums, and very many of them carried on worthy research among themselves. Their avocations were useful and beneficial both to themselves and to others; they were not merely devices to waste time. Today in America the amateur naturalist is nearing extinction. Part of this may be laid to the social trends of the times: to the rise of spectator sports and mass entertainments of a passive kind. But at least as great a share of blame must be laid to the botanical and zoological teaching of the present day. It does not lead students into participation; it deadens them with efforts to get across quantities of information and perspective that can be really absorbed or acquired only through prolonged experience.

Formerly in Europe a number of great botanical exchange clubs existed, largely patronized by amateurs. Now, after two world wars, only one survives. By two paths we can witness the realization of T. S. Eliot's flippantly grim declaration: "This is the way the world ends, Not with a bang but a whimper." Cultural impoverishment does not reveal itself only in the direct results of bombs and weapons of war.

François Crépin's *Manuel de la Flore de Belgique* was published in 1860. Typical of the many local floras and pocket guides published for most European countries, it reveals also the enthusiasm and enjoyment that botany once occasioned. It is technically respectable and adequate, in contrast with the flimsy, trivial wild flower guides which serve the American public of today. There has been an appalling deficiency of local floras in the United States — works of a kind which amateur naturalists could well undertake. Is there any prospect of such works being produced in the future, or has progress down hill already gone too far? I dare to hope that this resurrection of Crépin's words of a century ago may lead one or two moderns to attempt something of the kind.

The following somewhat free translation is of one paragraph of the foreword, and almost the whole of the first three parts of the introduction. The remainder (covering the plant geography of Belgium, the nature of plant species, a glossary, list of Belgian botanists, and publications cited, as well as the keys and catalogue of species) has been omitted.

### FOREWORD

In publishing this work, it is my intention to come to the aid of the numerous pupils in our schools and of our local botanical amateurs, hitherto reduced to employing foreign books in which only an incomplete representation of our flora is found. The real desire to be useful has perhaps led me to presume upon my abilities, and has inspired me to undertake a project which others would doubtless have elaborated with better knowledge. While rightly attributing most of the imperfections of this work to the inexperience of the author, one should still be mindful of the low state in which descriptive botany finds itself in Belgium. Our weakness in phanerogamic botany cannot be concealed: it leaps to the eye of anyone who glances over our modest scientific resources. We must all work with diligence, if we would raise ourselves to the

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**Botanice est Scientia Naturalis quae Vegetabilium cognitioem tradit.**

— Linnaeus



*(Botanizing, continued from page 1)*

level reached by our neighbors. They, I am confident, will look with kindly eye upon our efforts, and extend a hand for the courageous exertions we make to rejoice them.

#### BOTANIZING

Everybody knows that botanizing means taking a walk in the midst of the fields or woods with the aim of collecting plants, to study them first, then to dry them and preserve them afterwards in a herbarium.

At the start of his botanical studies, the beginner should limit himself to walks in the immediate neighborhood where he lives. There, in a quite limited area, along roadsides, in the shade of hedgerows, in fields, meadows and woods, he will encounter many unknown plants which will occupy all leisure time during the first year of study.

In his first botanical excursions, he should be restrained and content himself with a few plants which are not completely strange to him, and of which he knows the common names. Frequently, at the locality of his collecting, in the midst of a meadow or under the shade of a tree, he will stop, and, seated on the grass or on a bed of moss, will try to identify the flowers he has collected. His botany manual open on his knees, all absorbed in analyzing the different parts of a plant, pulling apart the petals and stamens, dissecting the fruit with his pocket knife, and examining all these structures with naked eye or with the aid of a lens, he will force himself to work through the key characters, couplet by couplet, which will lead him to the name of the species. With a little attention and patience, he will succeed fairly often in his first attempts at determination. What will his joy not be, to return home with a fist full of flowers that he has finally been able to name! Who is the botanist, now old, who does not recall with pleasure his earliest identifications, made out in the field, and does not remember how proud he was at being able to name an anemone, a butter-cup, or a spring *Draba* among the other mustards? Who is there who has lost all memory of those first days when he began to babble scientific jargon and talk of stamens, pistil, corolla, cauline leaves and radical leaves?

Back in his room for study, the apprentice botanist should carefully review the determinations made during his ramble, and make sure that the complete and detailed descriptions in his *Flora* apply exactly to the species he has just named by means of the analytical keys in his botany manual.

His first steps in the science will not be without some difficulties, especially if he is alone and dependent on his own resources. That which appears simple and elementary after a few months of work is singularly obscure at first; the very words calyx, corolla, stamens, so frequently repeated in the books, inspire a sort of dread. To gain an acquaintance with the names of the first plants, every means can be used: analytical keys, common names, books with illustrations, etc., etc. The first two or three dozen species to become well known will serve as landmarks, to guide one among the multitude of plants which decorate the fields and woods, and this nucleus of knowledge so painfully acquired will soon grow like a snowball. The first hundred identifications cause more difficulty than the next five hundred. If the beginner should fall in with an experienced botanist or teacher, his first difficulties will be lessened, for when he fails to figure out the name of a species, he can turn as last resort to the knowledge of another, after having exhausted all the means at his command.

During a year at least there will be no point in going farther than the neighborhood where one lives, and since the excursion will be short, one can, if necessary, do without a box for bringing back the plants; only one should choose for his outings the hours of the day when the sun is not too hot. The vasculum is often a veritable calamity for the beginner, to whom it is distasteful to appear in the streets of a village or town with this contraption at his side. After a whole season of practice and short outings, the most timid grows bold, and one sees

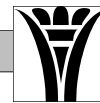
him, the second spring, take off resolutely with the vasculum at his back, defying the raillery of his friends and braving the gossip. I know one ardent amateur naturalist who did not care at all for using it. On seeing the beautiful specimens in his herbarium, one would never suspect the method he found for bringing them back from the field. On his walks, one would never guess he was botanizing, unless one saw him stop suddenly before a plant and collect a specimen of it, then gently place his huge felt hat on the ground and fill its ample interior with his gatherings.

The ordinary apparel of botanists is the cause of minor tribulations. They are often taken for salesmen, land surveyors, and I know not what! Sometimes when you are busy in a meadow or at the edge of a field digging up some plant, the owner of the field or some old shepherd will drop by, full of curiosity, to watch what you are doing and invariably ask what good the plant is and what sort of drug or salve can be made with it. Don't be at all dismayed at being thus demoted to a mere herb-gatherer, and be sure to explain the purpose of your scientific work: you won't compromise yourself at all, and your questioner will leave with a smile, giving you to understand thereby that you haven't taken him in. If the sight of a vasculum results in our being taken for peddlers, of what concern to us is the opinion of the good gentlemen we happen to meet along the way?

After this first season in collecting and determining most of the common species forming more or less the bulk of the vegetation, one can undertake, about the spring of the second year, to extend one's excursions for two or three leagues around. And only after the first year of trying and experimenting does one begin to realize that in order to have a real acquaintance with plants, it is not enough just to know their names and to have dried scraps of them, but that it is necessary to study them from various aspects, at different times of their life, and to prepare complete specimens both in flower and fruit. The use of a vasculum and small trowel then become indispensable.<sup>1</sup> Before going any further, let us say more of these objects. For the vasculum, aluminum is preferable to zinc, on account of its light weight. Its form is that of a cylinder with square-cut ends of elliptic shape. . . . In the larger towns, one finds these vasculums ready-made at certain stores. . . . The trowel is an indispensable instrument for digging up roots and bulbs. . . . The botanist will round out his equipment with a stick of dogwood, hooked at the end. The hook of this cudgel is very useful, either for pulling to shore floating or submerged water plants, or bringing down branches of trees for the flowers or fruits, or helping oneself over trunks or stumps, climbing steep hills, or clambering among rocks. Further, this staff serves to test the ground in crossing bogs or marshes, and its weight renders it a redoubtable weapon in warding off attacks of the canine race, whose anger is sometimes aroused by the botanist's attire.

Before setting out on an all-day excursion, it is necessary to be equipped also with a Manual or analytical *Flora*, a good route book, and a book for field notes. Too often the field notebook is neglected, and I cannot sufficiently recommend it to the serious amateur who wishes to know exactly the composition of the flora of the areas he explores. These field books should be filled out right during the excursion, and the names of the species observed written right when they are found. If one waits till returning to take notes on observation, he risks making errors. Anyway, nothing is easier than to jot down in pencil as one goes along the names of the plants and their locations. If later on one proposes to publish the results in a *Flora* or systematic catalogue, he will have a valuable resource in the field notebook. It is only necessary to reorganize the many notes contained in it to have a faithful account of the territory covered. In case one does not wish to make use of them oneself, these notes will still not be without value to science, for sooner or later some botanist may have need of data on the district or province studied. In either case, if one has failed to take notes of discoveries and observations, what complications will not present

*(Continued on page 3, Botanizing)*



*(Botanizing, continued from page 2)*

themselves, whether in publishing a Flora or in responding to requests for information? Memory must serve, but she is deceitful, and details found in the herbarium are not enough.

Apart from the scientific aspect, the field notebooks become a fascinating record to peruse. In going over these long lists of names and places, memories throng to the mind; one is transported anew to the midst of the fields, finds himself again in this or that place, in the company of friends with whom he has shared the pleasures of happy labors. The dry lists are transformed into a detailed history, in which are recorded down to the most trivial items the events of past days.

The book intended for notes may be of 50 or 100 pages of white, fairly durable paper of small format. At the end of each season, it is deposited in the library, and a new one started the next spring. The pages of one part of this small volume are divided into three vertical columns: the first for the names of the species, the second for the kind of area and nature of the terrain, the third for the name of the locality. The record for each outing is preceded by the date, and separated from the next preceding by a prominent pen-line. It goes without saying that very common species seen at every step need not be entered, but only those judged to be somewhat common, rather rare, or rare for the area.

So now our botanist is ready to take off with tools and equipment in search of the unknown. He leaves with the pleasant anticipation of returning at evening, his vasculum full of interesting items. In his rambles, let him disdain fatigue, and not confine himself to beaten paths, for, like a luckless hunter, he risks coming back as empty-handed as when he started; let him visit the corners and recesses of the woods, follow up shaded streams, and hardily climb up the cliffs. What to him is weariness if, at evening, he returns home burdened with a precious harvest? For some time his local trips will be rich in novelties, but as the country becomes better known, these discoveries will become less com-mon. On the other hand, he will more fully appreciate the value of rarities which he happens to encounter. What emotion will he not feel, after long and difficult search, to find himself face to face with a long-coveted species, which he perhaps had known through seeing dried specimens or a picture? He will experience the real and deep joy of a hunter who bags a noble specimen of game, or of the bibliophile who discovers a rare and priceless edition. If at such a moment he is by himself, the joy of discovery will not be quite so full as if a companion were there to enjoy it with him. Solitary excursions are generally the lot of amateurs living in the country or small villages; in a town there may rarely be two botanists to join forces in their rambles and their work. These solitary walks have a tinge of sadness, but nonetheless they offer certain advantages over those more gay ones made with a small crowd. Alone with his thought, beholding the panorama of nature, and in continual communion with the objects of his studies, the observer is ceaselessly led to reflect upon the laws which govern living things, and to seek a solution to the countless problems that Nature presents everywhere. In the solitude of the woods, in the midst of an immense heath, the meditations of the naturalist are more connected, and his thoughts rise to loftier heights than between the four walls of a study room. Aside from that, the isolated searcher possesses greater freedom: he stops where he sees fit; he studies a plant at his leisure, seated against a tree or perched on a rock, and has no need to consider the impatience of a travel companion. If he has just made a valuable find, can he not still share his pleasure with his correspondents, who will rejoice in his good fortune? Whatever the drawbacks of solitude, let the botanist avoid, while botanizing, the company of those who are strangers to science, or who pursue another branch. A botanist cannot

adjust himself to the pace of a geologist, still less that of an entomologist. I strongly recommend to the isolated observer that he get in touch with kindred spirits in the region. It sometimes happens that between two neighboring districts two botanists, unknown to each other, make excursions even to the same field, without suspecting the existence of a confrere in the vicinity.

Let us go back to plant collecting, and review the various means of keeping fresh the plants taken. During the hours of the day when the sun is hottest, be careful to carry the vasculum on the shady side of the body. On warm days, plants will keep better if numerous and crowded in the vasculum. A good way of keeping them fresh is to moisten them from time to time, and to keep a layer of moss or damp grass in the bottom of the container. If ill luck should have it that there is a shower, do not stop collecting under the pretext that rain-wet specimens dry poorly and mold afterward in the herbarium. For my part, I have never encountered difficulties in preparing plants that have been rained on: in such cases one must change driers which have absorbed the external moisture of the plants sooner after putting in press. Whenever, at evening, one returns tired and hungry, and so less able to attend with proper care to the preparation of the material, it is well to leave the vasculum in a cool place or a cellar. During the night, plants slightly wilted the evening before become refreshed like the botanist, and the next morning plants and botanist function very nicely.

Before leaving for excursions of several days' duration, I want again to call the attention of beginners to several recommended practices, to help them succeed in their investigations and give an intelligent direction to their searches. A good route map (one pasted on a stiff back and folded so that it can be carried in the pocket) will be of the greatest assistance in becoming oriented in a region one did not know before, and learning the names of villages, creeks and rivers. A short-coming of most botanists, young and old, is to follow almost the same route in going to one or another distant point in their district. They habitually stick to the same course, the same path, without wondering if to right or left there is not a field or meadow which might conceal a new species. It sometimes happens that for a whole decade one can pass by a spot which all the while contained several novelties. This eccentricity explains how botanists who are strangers to the area lead you to finds which you have over-looked. So vary your itinerary as much as possible, and take advantage in going to or from distant points of the chance to cross a field or follow a hedgerow which has not yet been inspected.

The use of a geological map is likewise most helpful. The observer living in a region of varied geological structure will notice early the marked preference of certain species either for calcareous rocks or for siliceous ones. He will be struck by the contrast presented between the rich and varied flora of limestone hills compared with the monotonous and poor one of schist outcrops. He will want to know the reason for these difference, and thus will be led to the study of plant ecology.<sup>2</sup> The desire will grow on him to check on a geological map the extent of the various rock formations of his district, to follow the continuation of these same formations into neighboring provinces and even beyond, and to see, by examining Floras of these regions, if the same species occur consistently through the entire extent of the different out-crops. This scrutiny of Floras of neighboring areas will furthermore lead him to make new discoveries. Noting the regular presence of certain species on rock types represented in his area only by isolated outcrops or narrow extensions, he will make special visits to these spots, perhaps previously neglected, and will quite often meet with success.

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**Botany is the natural science that transmits the knowledge of plants.**

— *Linnaeus*



*(Botanizing, continued from page 3)*

The goal of the botanist-explorer thus becomes multiple: it is no longer merely in order to obtain plants to study and to keep in a herbarium that he botanizes, but he will remember at all times to indicate the type of habitat preferred by these same plants. To these two items will soon be added a third; for, having seen right at the start that plants do not grow indifferently in all sorts of places, he will suspect that the preference of certain plants for this or that kind of soil, which is necessarily a consequence of the breakdown in greater or lesser degree of the rocks or of their chemical composition, is often subordinate to a more general influence, that of the distribution of heat over the surface of the globe. He will thus be led to a general study of plant geography. . . . Then his studies will acquire a greater significance for him, as he realizes how much the data he assembles can advance our knowledge of plant geography. In his own district, he may perhaps be able to record the northernmost occurrence of a southern species, or the southernmost occurrence of a northern one. From a very local point of view, he will be stimulated to cooperate in advancing the knowledge of the plant geography of his own country.

A practice which I recommend to the collector is to abstract from floras and catalogues the data they contain about the territory to be explored, and to arrange the information by flowering time and locality. My work has often benefited from this useful practice. In order to have the species better in mind, it is well to read the descriptions, look at the illustrations, or examine dried specimens. If no flora has been published for the region, check those of neighboring countries with similar physical conditions, and abstract them in the same manner noted above. If one botanizes without system—in other words, without knowing its geological and mineralogical constitution, without any notion of the composition of its flora, and without taking preliminary notes, he will overlook or mistake a great many interesting species which escape the inattentive eye, because of small size, or unusual habitat, or resemblance to common species.

In concluding these recommendations, it will be worth while to warn beginners against the fear of exhausting the field of their researches within a few years. Such a fear should not be allowed to diminish one's efforts, for the more they seem likely to exhaust the area, and the more the flora becomes familiar, the more it will become plain that this fear is groundless. Finally, after several years, one will have collected 800 or 1,000 species, with a certain number of varieties, but there will still remain for study and collection those thousands of forms which constitute the varieties and minor variants of the 800 or 1,000 already obtained. And there is no guarantee that among these thousands there may not be still a certain number which are distinct but hitherto unknown, and on closer study one may have the pleasure of elevating them to the rank of species. These numerous forms are an inexhaustible mine for the industrious worker. It is true that botanizing becomes less interesting, and does not so often offer the chance to discover one of those species vulgarly called Linnean, but it can be varied from time to time by trips to neighboring districts where fellow botanists live. During the favorable months of the year, small expeditions can be arranged by two or three amateurs to distant localities. The hope of some day making a trip to the high mountains or the sea shore, or to foreign countries, may sustain the patient worker in the somewhat monotonous task of studying home species in close detail.

This leads me to some remarks about trips made out of the usual area, and lasting perhaps eight to fifteen days.

Before undertaking such an expedition, it is essential to study maps of the soil, topography and streams of the country to be visited. It is also necessary to go through the floras of the country, and enter systematically in a notebook the data they contain about sections that have already been thoroughly explored. Once the place and date have been settled, one looks to the gear to be taken. As regards clothing, this should be kept at a minimum, so that all can easily be contained in a

single overnight bag. Above all do not forget a pair of slippers, a most welcome comfort after a tiring day in hobnail boots. The overnight bag may likewise hold an elementary Flora, paper and other needs for writing and drawing, as well as dissecting 'scope, a lens, forceps and scalpels. It will be necessary to carry one or two presses with straps, and enough paper for the anticipated collections. It is not wise to leave with empty presses, in the expectation of obtaining paper on arrival, for one might be disappointed. Even in a county seat it is not always possible to obtain paper suitable for pressing plants, and the lack of it is even more to be feared in smaller towns, where it is sometimes necessary to stay.

I have assumed that such an excursion will be made with a small group, and it is then that it offers the greatest attraction. I appeal to other botanical travelers, to say if trips made in the company of two or three friends have not left them the most fresh and charming recollections. Do they not recall with lively pleasure those days when they set out bright and early, vasculum on back, when they rambled across unknown woods, meadows and bogs which promised to yield so many new things; do they not remember with enjoyment the picturesque scenes admired together, the emotions produced by the abundant collections; do they not find pleasure in thinking sometimes of those noonday halts, made under the shade of an oak or on the turfy bank of a clear stream, to eat out of hand some morsel carried that morning in the vasculum? These memories are ineffaceable, and long years afterward are still the subject of conversation among botanists.

It is better to leave in the morning and return at night than to divide the day in two. While traveling, after having seen to gastronomic needs, it is necessary, instead of resting, to busy oneself forthwith in caring for the plants collected during the day. It is a job which must not be left till the next morning, for upon arising it is necessary to change driers of specimens of the previous evening and preceding days, and spread them out so that they can dry and be ready, by day's end, to receive a new batch of specimens. After these duties, and before breakfasting, one takes notes on plants left for this purpose in the vasculum the previous evening. Days thus passed in botanical travel are laborious, but on returning home, one has truly won the right to repose, and the leisurely study of the fruits of his endeavors.

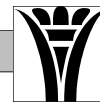
#### Collection and Preparation of Specimens. Herbarium.

Plants intended for the herbarium should, so far as possible, be collected in dry weather. Each one should be collected with all parts. If the plant is herbaceous, of small or medium size (which is most often the case), collect it entire, with root or base; if it is tall, the upper part and some basal leaves will do. For trees and shrubs, it is sufficient to take branches with a bit of bark. Finally, if the plant is a parasite, collect it with a bit of the species to which it is attached.

Do not confine yourself to collecting species in flower only, but take fruiting specimens also; further, if the plant loses its lower leaves before flowering time, take the trouble to collect rosettes in winter. The species should be so represented in the herbarium that it can be studied completely from the earliest leaves to final maturity.

Ordinarily a certain number of plants will necessarily be ruined by dissecting for study, and it is always well to collect several: the best are kept for the herbarium. If it happens that a species of one's area is very rare elsewhere, provision should be made to satisfy the needs of correspondents. However, one should take care not to exterminate rare or interesting plants at their localities. There are already so many destructive influences that the botanist concerned about the future should avoid impoverishing the area of his studies by unrestrained collecting; he should even be careful about revealing the stations where certain rare plants grow to any but amateurs on whose discretion he can de-

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(*Botanizing, continued from page 4*)

pend. To anyone conscious of the importance and interest of plant geography, such a caution is superfluous. The botanist planning to collect for exchange should select localities where the species occurs in abundance. A good way to conserve those less plentiful is to collect only the tops, and not to take roots, bases or bulbs.

On returning home after each trip, one takes care of the day's collections. If this job is postponed to the next day, the plants should be kept in a cellar or other cool place. They should be carefully removed from the vasculum and neatly arranged in drying papers. . . . In the center of each sheet, place one plant, or several if they are small, laying them out with care, and always without changing the natural direction of branches, leaves and roots. If the plant is very bushy, one may remove branches or leaves; if the stem exceeds the size of the sheet, it can be bent down at a sharp angle. One should not remove dead stalks or leaves which may be present at the base of the plant, on artistic grounds; these remains are of great value for study. . . .

When first one tackles the job of drying, a thousand cares will be taken: the petals of each flower are spread out with the most scrupulous attention, the leaves separated from one another by slips of paper, etc.; finally a great deal of time will be consumed by a single specimen. Drying under such conditions becomes a very tedious job, able to repel the most courageous. Actually the extra pains are unnecessary: plants tossed on the drying sheets, stuck in bundles, lightly pressed at first, then gradually more strongly so, with frequent change of driers, are just about as well prepared as those dried with minute care. With a little practice, the drying of plants becomes easy, and one becomes able to dispose of large numbers of specimens rapidly and without excessive effort. . . .

#### LIBRARY OF THE YOUNG BOTANIST

He who commences the study of botany is often faced with difficulty in choosing elementary books suitable for an introduction to the science. As if by a kind of fatal affliction, it is not at all rare to see him assemble a small library of quite mediocre books, or even plain bad ones. If he wishes to study botany as a simple amateur, the books listed below will suffice him, but if he plans to delve more deeply into some phase of the science, he will need to have a lot of other publications. I have listed works in different languages, for nowadays it has become indispensable to know several foreign languages: the scholar or the serious amateur must consult the writings of botanists who use German, French, Italian, etc.

#### Elementary Works

- DE JUSSIEU (Adrien). *Cours Elementaire de botanique* . . . —A new edition is printed almost every year.
- RICHARD (Achilie). *Nouveaux elements de botanique et de physiologie vegetale*. De Saint-Hilaire (Auguste). *Lemons de botanique*.
- DE CANDOLLE (A. Pyr.). *Organographie vegetale*. — *Physiologie vegetale*.
- LINDLEY (J.). *An introduction to botany*.
- LINNE. *Philosophia botanica*.
- DE CANDOLLE (A. Pyr.). *Theorie eiemenaire de la botanique*.
- GERMAIN (Ernest). *Guide du botaniste*.

#### General Works on the Classification of Plants

- LINNE. *Genera plantarum*.
- ENDLICHER (Steph.). *Enchiridion botanicum*.
- LINNE. *Species plantarum*.
- WILLDENOW (C.-L.). *Linnaei Species plantarum*.
- ROEMER ET SCHULTES. *Systema vegetabilium*.
- SPRENGEL. *Linnaei Systema vegetabilium*.
- DE CANDOLLE (A. Pyr.). *Prodromus systematis naturalis* . . .

[from Shinners—]

Crépin's words are apt to be read with some condescension by the modern reader who, especially if he is a professional botanist, may find them naive and unsophisticated. But how many moderns, even with a bachelor's degree, would consider works of equivalent calibre to those by Linnaeus, De Candolle, and Lindley, in three different languages, suitable for beginners in botany? Yet Crépin was writing for persons who did not possess even the equivalent of a high-school education (at least in number of years of schooling). I have at hand a recent paper-backed booklet on American wild flowers, full of colored pictures, but with only sketchy and superficial descriptions, no keys, and not a single mention of a Latin name. What would Crépin have thought of such milk and water?

Late in the 19th century a sensitive English observer wrote that the United States had successfully solved its political and economic problems, but not the human one. Had Matthew Arnold been a botanist, he might have made some qualification, for in his day at least botanical study worthy of the name was a popular avocation, as attested by the wide sale of works by Asa Gray, Alphonso Wood, and Mrs. Lincoln (none of whom avoided Latin names, keys, or technical terms) to a public among whom college degrees were a rarity. Progress within technical fields is easily mistaken for universal progress.

In the often repeated comment of a famed though fictional Belgian detective, "It gives one to think."

#### Translator's Notes

<sup>1</sup>In the distant wilds of the U.S. of North America, especially in drier regions, it may prove better to collect directly into the plant press, and eschew the use of the vasculum altogether. Also, a small hand pick or geologist's hammer, or a heavy knife, may serve better than a trowel.

<sup>2</sup>"Phytostatiques" was Crépin's word; ecology was not to be invented for another third of a century.

[If, after reading his translation of Crépin, you find yourself wondering about Lloyd Shinners, I recommend "Lloyd Herbert Shinners: By Himself" by Ruth Ginsberg, 2002, Botanical Research Institute of Texas. In addition, I list below "elementary books suitable for an introduction to the science" of New Mexico Botany—ed.]

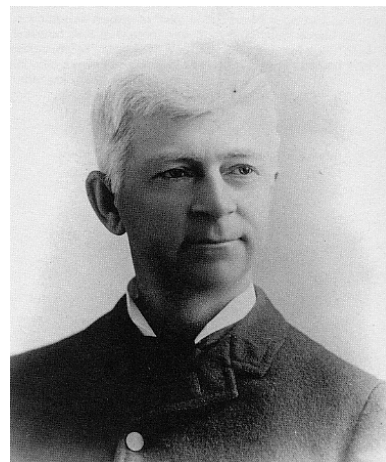
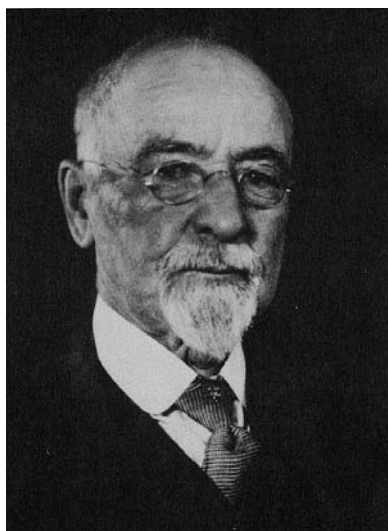
- Allred, K.W. 2005. *A Field Guide to the Grasses of New Mexico*, 3<sup>rd</sup> ed. Agric. Exp. Sta. New Mexico State University. 388 pp.
- Allred, K.W. 2007. *A Working Index of New Mexico Vascular Plant Names*. <http://cahe.nmsu.edu/academics/rangescienceherbarium/a-working-index-of-new-m.html>
- Correll, D.S. & M.C. Johnston. 1970. *Manual of the Vascular Plants of Texas*. Texas Research Foundation, Renner, Texas.
- Cronquist, A. et al. 1972+. *Intermountain Flora*. New York Botanical Garden Press.
- Dick-Peddie, W.A. 1993. *New Mexico Vegetation: Past, Present, and Future*. Univ. New Mexico Press, Albuquerque. 244 pp.
- Elpel, T.J. 2004. *Botany In A Day: The Patterns Method of Plant Identification*. Hops Press, Pony, Montana. 221 pp.
- Flora of North America Editorial Committee, eds. 1993+. *Flora of North America North of Mexico*. 12+ vols. New York and Oxford.
- Harris, J.G. & M.W. Harris. 1994. *Plant Identification Terminology, An Illustrated Glossary*. Spring Lake Publ., Spring Lake, Utah. 197 pp.
- Ivey, R.D. 2003. *Flowering Plants of New Mexico*. 4th ed. Publ. by the author. 573 pp.
- Judd, W.S. et al. 2008. *Plant Systematics: A Phylogenetic Approach*. 3rd ed. Sinauer Assoc., Sunderland, Massachusetts.
- Kearney, T.H. & R.H. Peebles. 1969. *Arizona Flora*. With Supplement by J.T. Howell and E. McClintock. Univ. California Press.
- Martin, W.C. & C.R. Hutchins. 1980, 1981. *A Flora of New Mexico*. Vols. 1, 2. Vaduz, West Germany, J. Cramer. 1276 pp.
- Weber, W.A. & R.C. Wittmann. 2001. *Colorado Flora: Eastern & Western Slope* (2 vols.), 3rd ed. University Press of Colorado, Boulder.
- Welsh, S.L. et al. 2003. *A Utah Flora*. 3rd ed. Brigham Young Univ. Print Services. 912 pp.
- Wootton, E.O. & P.C. Standley. 1915. *Flora of New Mexico*. Contr. U.S. Natl. Herb. 19:1-794. ©





## Who Are These Guys?

Can you name these botanists, and a plant named after them?



L-R: Charles Wright, Paul C. Standley, August Fendler, Marcus E. Jones, Asa Gray, Edward L. Greene, E.O. Wootton, Alice Eastwood, & Albert S. Hitchcock.



## Notebooks, Again...!

From my continued preoccupation with field notes and journals comes this extract from the field book of Willis Linn Jepson, extraordinary California botanist of the last century. More than 60 of Jepson's field books are available online through the courtesy of the Jepson Herbarium ([http://ucjeps.berkeley.edu/images/fieldbooks/jepson\\_fieldbooks.html](http://ucjeps.berkeley.edu/images/fieldbooks/jepson_fieldbooks.html)). The pages below are from an account of a field trip on 15 June 1941, to the hills of the Tiburon Peninsula, Marin County, north of San Francisco. I have excerpted his account of the lunch stop.

For a luncheon <sup>spot,</sup> we took a side road in the town at Tiburon and, parking the car off the wagon-track, we climbed through a barb-wire fence and went up an oak-covered slope into a little glade. We had hot consomme, fried chicken; black olives; shrimps; green olives; avocados; a variety of sandwiches; shoe-string potatoes; cucumbers; frosted and unfrosted cake; and a lot of other things I have forgotten. As

June 15, 1941. 19  
 We sat here under the oaks, a view, broad and stirring, opened southward - a series of contrasts: the oak-covered slope; a marsh at foot of <sup>the</sup> hill filled with rushes and tules; a playing field bordering the village of Tiburon with a base-ball team and spectators; next the seaway of the Golden Gate and rising on its hills southward the skyline of San Francisco; the sky-scrapers on Nob Hill, the tall business blocks to the left; Russian Hill, and finally Telegraph Hill with its tall Coit Tower.





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