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A GARDEN OF HERBS.*

BY CASWELL A. MAYO.

On becoming a flat dweller in Cincinnati I was forced to fall back on the front yard of the laboratory of the Wm. S. Merrell Company as the only available piece of ground which I could convert into a garden. This the firm kindly placed at my disposal together with a liberal appropriation for expenses and here we have the beginning of a "Garden of Herbs" which promises to be of considerable interest.

Prior to the Civil War Cincinnati was the center for the collection of indigenous drugs. But now this center is in the mountains of North Carolina. Within twenty-five miles of Cincinnati I have found forty or fifty medicinal plants some of which, such as *Hydrastis*, have been almost entirely wiped out by the drug collector.

The intensive cultivation of the land constantly reduces the areas where indigenous drug plants can be found while commercial diggers soon clear out of such woods as are left near the cities the more valuable drugs for which there is a ready market.

In Hamilton County, Cincinnati, Ohio, and Kenton and Campbell Counties, Kentucky, just across the river the following drug plants were indigenous but have been exterminated:

* Scientific Section, A. Ph. A., Cleveland meeting, 1922.

Eupatorium purpureum, Hepatica triloba, Iris versicolor, Serpentaria, Panax quinquefolium, Symplocarpus fetidus.

The following plants at one time plentiful are now rare:

Apocynum cannabinum, Apocynum androsaemifolium, Arum triphyllum, Asarum canadense, Asclepias incarnata, Caulophyllum thalictroides, Ceanothus americanus, Celastrus scandens, Cimi, cifuga racemosa, Collinsonia canadensis, Euonymus atropurpureus, Eupatorium perfoliatum, Geranium maculatum, Gnaphalium polycephalum, Hydrangea arborescens, Hydrastis canadensis, Hypericum perforatum, Jeffersonia diphylla, Juglans cinerea, Lobelia inflata, Polemonium reptans, Polygala senega, Polygonatum biflorum, Pulmonaria officinalis, Sanguinaria canadensis, Scutellaria lateriflora, Senecio aureus, Tanacetum vulgare, Trillium erectum, Verbena hastata, Xanthoxylum americanum.

The following plants are locally frequent:

Dicentra cucularia, Dicentra canadensis, Chenopodium anthelminticum, Epigaea repens, Leonurus cardiaca, Marrubium vulgare, Mentha piperita, Mentha viridis, Oenothera biennis, Penthorum sedoides, Phytolacca decandra, Polygonum punctatum, Podophyllum peltatum, Rhus glabra, Scrophularia nodosa, Sambucus canadensis, Solanum carolinense, Verbascum thapsus.

The plants listed below are still found in commercial quantities:

Achillea millefolium, Capsella bursa-pastoris, Galium aparine, Hedeoma pulegioides, Lactuca virosa, Nepeta cataria, Plantago major, Rhus toxicodendron, Rubus strigosus, Rumex acetosella, Rumex crispus, Solidago odora, Taraxacum dens-leonis.

But one need not confine himself to the local flora in making a garden of herbs. I have used the following list to work from. Most of these plants will grow almost anywhere in the United States, provided the soil, sun, exposure, etc., are suitable. Some of them, as Gelsemium and Passiflora, which are marked "tender" are winter killed in the North. I have failed so far to get them to grow in Cincinnati, but still have hopes. And that is the keynote of the gardener's character. He is a born optimist. No matter what happens this year he has hopes for next year. The line "Man never is but always to be blest" must have been inspired by contemplation of a gardener.

Many of the plants listed by nursery men are used or have been used in medicine, and it is easy, therefore, to give a medicinal slant to your garden. The following list compiled from the catalog of Bobbink & Atkins of Rutherford, N. J., will offer suggestions to any one who may be tempted to undertake for himself a garden of herbs.

Name.	Height.	Flowering month.	Class.	Color.
<i>Achillea millefolium</i>	2'	7-9	2	White
<i>Artemisia abrotanum</i>	2-3'	7	2	Greenish
<i>Asclepias tuberosa</i>	2'	7-8	2	Orange
<i>Papaver orientale</i>	2'	6-7	2	
<i>Spigelia marilandica</i>	1½'	6-7	2	Red
<i>Anthemis nobilis</i>	2'	6-7	2	White
<i>Marrubium vulgare</i>	2'	7-8	2	White
<i>Mentha piperita</i>	2-3'	7-8	2	Purple
<i>Mentha spicata</i>	2-3'	7-8	2	Purple
<i>Liatris spicata</i>	2-3'	7-9	2	Purple
<i>Lavandula officinalis</i>	2'	6-7	2	Blue
<i>Salvia officinalis</i>	2'	6-7	2	Blue

<i>Hyosopus officinalis</i>			2	
<i>Ruta graveolens</i>			2	
<i>Asclepius incarnata</i>	3-4'	8	2	Pink
<i>Valeriana officinalis</i>	3-5'	8	2	Pink
<i>Eupatorium urticifolium</i>	4-5'	8	2	White
<i>Eryngium yuccafolium</i>	3-4'	7	2	Greenish white
<i>Cimicifuga racemosa</i>	4-5'	6-7	2	White
<i>Eupatorium purpureum</i>	6-7'	7-8	2	Purple
<i>Cassia marilandica</i>	5-6'	7-8	2	Yellow
<i>Aspidium filix mas</i>	15"-15"			
<i>Lilium tigrinum</i>	2'	8-9	Annual	Orange
SPRING FLOWERS:				
<i>Helleborus niger</i>	9"-15"	3-4	2	White
<i>Hepatica tribloa</i>	4"-6"	4-5	2	Blue
<i>Polemonium reptans</i>	8"-12"	4-5	2	Blue
<i>Sanguinaria canadensis</i>	6"	4-5	2	White
<i>Mertensia virginica</i>	12"	5-6	2	Rose
CREEPERS:				
<i>Arctostaphylos uva ursi</i>	2"-4"	4-5	2	White
<i>Epigaea repens</i>	2"-4"	3-4	2	Rose
CLIMBERS:				
<i>Humulus lupulus</i>		7-8	2	Greenish
<i>Euonymus atropurpureus</i>		6-7	2	Brown
<i>Celastrus scandens</i>		5-6	2	Brown
<i>Solanum dulcamara</i>		6-7	2	
<i>Passiflora lutea</i>		6-7	2	
SHRUBS:				
<i>Crataegus oxyacantha</i>	2' 3'	5-6		White
<i>Hydrangea arborescens</i>	3'-6'	7-8		White
<i>Hamamelis virginiana</i>	5'-8'	10-11		Yellow
<i>Viburnum prunifolium</i>	5'-8'	5-6		White
<i>Viburnum opulus</i>	5'-8'	5-6		White
<i>Sambucus canadensis</i>	5'-8'	6-7		White
<i>Chionanthus virginiana</i>	5'-8'	6-7		White
<i>Ptelea trifoliata</i>	5'-8'	6-7		
<i>Cornus florida</i>	5'-25'	5-6		White
<i>Oxydendron arborus</i>	5'-25'	6-7		White
<i>Ceanothus americana</i>	2'	6-7		White
<i>Rhus canadensis</i>	3'-8'	3-4		Yellow
<i>Xanthorrhizza apiifolia</i>	1'-2'	4-5		Brownish
<i>Gillenia trifoliata</i>	3'-4'	5-6		White
EVERGREENS:				
<i>Juniperus communis</i>	1'-2'			
<i>Comptonia asplenifolia</i>	1'-2'			
<i>Prunus stolonis</i>	5'-150'			
<i>Thuja occidentalis</i>	5'-100'			
<i>Thuja canadensis</i>	5'-78'			

In addition to what I could find in the woods, I called on friends for assistance, and Dr. F. B. Kilmer, of Johnson and Johnson, New Brunswick, sent me a handsome collection of small belladonna plants and several second-year roots. Professor L. E. Sayre, of Kansas, sent me a supply of *Echinacea angustifolia*, Dr. W. W. Stockberger of the Bureau of Plant Industry sent *Iris versicolor*, which was at one time

quite plentiful in Hamilton County, but which is long since extinct, *Inula helenium*, and a dozen varieties of drug plant seeds. These sources have been supplemented by purchases from collectors in the North Carolina mountains, and from a nursery at Hopedale, Ill., which makes a specialty of drug plants, and from local sources, including fellow members of the Cincinnati Branch of the American Wild Flower Preservation Society.

The results so far are interesting though not very attractive from a strictly horticultural point of view; in fact, the average layman would be inclined to sneer at my collection as a "passel of weeds," but to the one who has been familiar with drug names and drug products all his life there is a keen fascination in watching the development of the plants from the seed or from the seedlings into the forms figured in the books and described in the Pharmacopœia and the National Formulary.

The soil, the location, and even the atmosphere of my garden are decidedly unfavorable, for the earth was originally building debris with a scant covering of tillable soil. The presence of smoke in the atmosphere (for there is still smoke in Cincinnati, even since the introduction of natural gas, though the conditions are very much improved), the tall buildings, surrounding the little plot, and the strong currents of wind which dry out the soil and tear off the leaves of the tender plants — all militate against our little garden of herbs. But in spite of all this the number of plants grow and as the soil improves with tillage and the constant addition of fertilizer, their size increases.

On account of the esthetic demands of the situation, for the garden occupies the front yard of the office, I have been compelled to introduce plants little if ever used in medicine, such as dahlias, gladioli, *lilium auratum*, etc., and for the Spring garden I have had to go quite outside of medicinal plants in order to get an adequate showing of color.

When I see what has been accomplished by Dr. Newcomb at the University of Minnesota, by Dr. Lyman at the University of Nebraska, and by others who have at their command the resources of a university and of an entire state, and who consider the growing of drugs as a vocation and not as an avocation, I feel almost ashamed to talk about our little garden of herbs. But to the pharmacist, even if he has limited means and restricted leisure, there is a possibility of great pleasure in the making of such a garden, and if he is fortunately located he will find that his trips to the woods in search of indigenous drug material will be the happiest and healthiest way in which he may spend his Sundays and holidays.

THE QUESTION OF SOIL.

Most of our drug plants are woods plants, and accustomed to an acid soil which is one reason why I have such a high plant mortality in my garden. Professor Coville and Dr. Wherry of the Bureau of Plant Industry have made some interesting studies of this phase of the subject and Bulletin No. 1 of the American Horticultural Society tells of the successful use of aluminum sulphate for rendering the soil acid where one wishes this condition to prevail. In a rough way about a half pound of aluminum sulphate is spread on each square yard of the soil, but the only safe way to render the soil acid is to keep adding the sulphate until the soil gets the acid reaction. Of course, there are many plants which require an alkaline

soil. This opens up a very interesting field for study and observation. For instance, we cannot grow any of the ericaceae, rhododendrons, azalias, etc., in Cincinnati, on account of the alkalinity of the soil. I hope to be able to do this by the aid of aluminum sulphate.

BEZOAR.*

BY WILLIAM KIRKBY.

The *Via Appia* of historical medicine presents to the eye of the traveller many tombs of dead theories and of defunct remedies, some of which may repay a half hour's contemplation by the student of anthropology. Even in these later times of high scientific attainment it is a quite common experience to find people, under the compulsion of bodily pain or mental distress, indulging themselves in the hope, and often in the belief, that a panacea will be forthcoming for each and every ill that flesh is heir to. Such a hope may be vain, but if it keeps alive the spirit of research, as we believe it does, it is by no means unfruitful. In the quest of agents to alleviate human suffering it is natural that the keener vision, which enlarged knowledge supplies, should often be directed backwards over the travelled path to see if each by-way has indeed been thoroughly explored. Thus it comes to pass that old remedies are resuscitated and tried again in new circumstances and in new combinations. Indeed it is in but a few cases that we can feel assured that an expired remedy is really beyond the call to a resurrection. Of these few there is one which is sufficiently interesting, I think, to occupy your thoughts for a few minutes because its vogue was at its height for a fairly well-defined period, because it is a good illustration of the deep-seated desire to possess a panacea, because it exhibits a prevalent human weakness to cherish the notion that the mysterious may, and probably does, achieve results of a miraculous nature, and because when the character and composition of the remedy were tested in the true scientific spirit it was manifest that its supposed medicinal properties were nonexistent and would not sustain the belief in its reputed virtues of the most credulous civilized person.

Bezoar stones are now merely medical curiosities, but during the seventeenth century and part of the eighteenth they were highly valued as a medicine of great efficacy. In 1621 we find Robert Burton writing in "The Anatomy of Melancholy," in the subsection in which he discourses on "Alteratives and Cordials," that

"Christophorus Ayreus prefers Bezoar stone and the confection of alkermes before other cordials, and amber in some cases. Alkermes comforts the inner parts, and bezoar stone hath an especial virtue against all melancholy affections; it refresheth the heart and corroborates the whole body. . . . After a purge three or four grains of bezoar stone, and three grains of amber-grease, drunk or taken in borage or bugloss water, in which gold hot hath been quenched will do much good."

He goes on to say that

"To bezoar stone most subscribe, Manardus and many others; 'it takes away sadness and makes him merry that useth it; I have seen some that have been much diseased with faintness, swooning and melancholy that taking the weight of three grains of this stone, in the water of oxtongue, have been cured.' Garcias ab Horto brags how many desperate cures he hath done upon melancholy men by this alone, when all physicians had forsaken them."

* Section on Historical Pharmacy, A. Ph. A., Cleveland meeting, 1922.