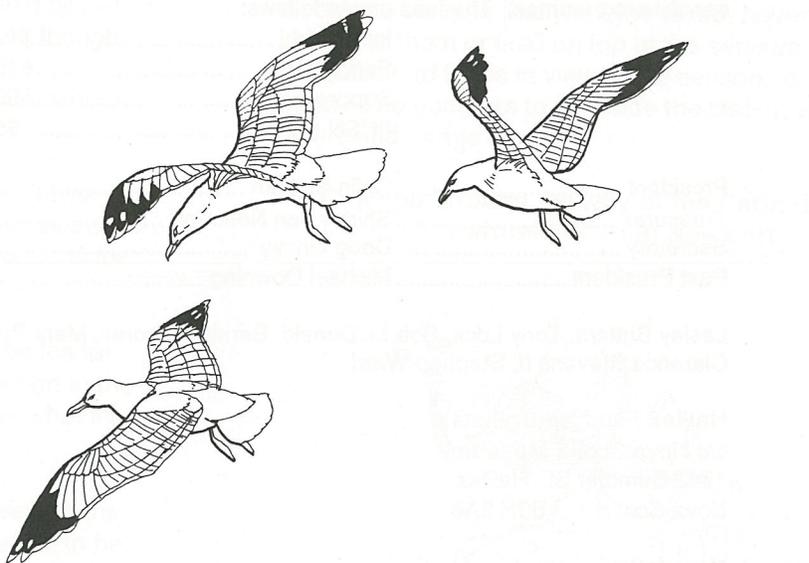


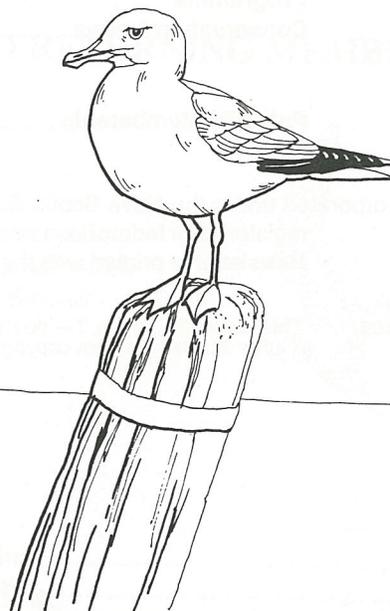
HALIFAX FIELD NATURALISTS' NEWSLETTER

June to August 1992

No. 67



Return address:
Halifax Field Naturalists
c/o Nova Scotia Museum
1747 Summer Street
Halifax, NS B3H 3A6



SPECIAL ARTICLES

THE MEDICINAL PROPERTIES OF GINSENG

For centuries, the Chinese have used the ginseng plant for its medicinal properties, especially its ability to slow down aging. Now, Canadian scientists are studying the plant in the hopes of learning more about its pharmaceutical value and possibly even creating new drugs based on its 28 active compounds.

At the Department of Biomedical Sciences at McMaster University in Hamilton, Ontario, Dr. David Kwan is studying one of these compounds - which are known as ginsenosides - which lowers blood pressure. It works very differently from conventional medication, and understanding it could lead to the development of better drugs.

The body has three different methods of regulating blood pressure, all interrelated. One method is controlled by the nervous system, one by hormones, and one by the muscle cells of blood vessel walls through their regulation of the amount of calcium going in and out of them.

Calcium carries out all kinds of functions in living systems, including regulation of muscle contraction. If too much calcium enters the smooth muscle cells lining the blood vessels, they contract, raising blood pressure. Most anti-hypertensive drugs work by blocking calcium entry into the muscle cells, thus keeping the calcium concentration in them low and keeping them relaxed.

Another route for calcium into muscle cells is mediated by hormones, which stimulate 'gates' on the cell surface to open and let the calcium flow in. The ginsenoside which lowers blood pressure works by shutting these gates, so that calcium cannot flow either in or out. David Kwan is studying this mechanism.

Ginsenosides probably won't replace conventional drugs because their complex structure will make them difficult to synthesize; extracting them from the plants would be prohibitively expensive. But by studying ginsenosides and understanding how they work, researchers may be able to develop simpler drugs with similar attributes.

David Kwan has also been studying the different

pharmaceutical properties of Asian and American ginseng. The two plants have about 20 ginsenosides in common, but their concentrations differ, making the plants' medicinal properties very different. The American plants have more than twice as high a concentration of ginsenosides as the Asian.

Canada actually exports ginseng to Hong Kong. Farmers in southwestern Ontario are beginning to replace some of their tobacco crops with it. Kwan and other Canadian scientists have formed the Canadian Ginseng Research Foundation to promote the study of Canadian-grown plants.

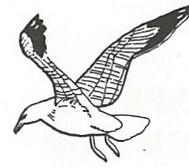
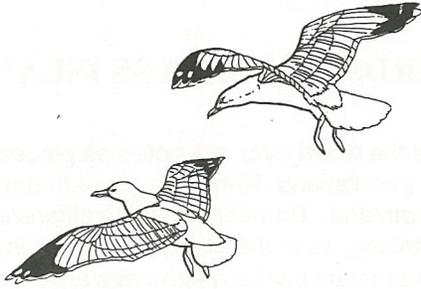
Ginseng was selected for study in the University of Alberta's research programme on traditional medicines and was found to contain a compound that could be used to treat Alzheimer's disease. Dr. Larry Wang, a physiologist in the Zoology Department at the University of Alberta in Edmonton, has found that the compound, named RB 1, extracted from the root of American ginseng, reverses memory loss in rats.

Larry Wang used a simple shock-avoidance method on three groups of rats: a control group of normal rats, a group in which amnesia was induced by treatment with scopolamine - which causes memory loss similar to that in Alzheimer's patients - and finally a treatment group which received injections of RB 1, and on the third day, a dose of scopolamine. The normal rats quickly learned to avoid the electrode which administered a mild shock; the rats dosed with scopolamine did not learn to avoid it, and the rats dosed with RB1 showed avoidance patterns intermediate between the other two. This indicated that the effects of scopolamine had been partly overcome by the RB 1

Wang and his colleagues then tried to determine what chemical changes were occurring in the brains of animals treated with RB 1, and found that it increased the production of a chemical, acetylcholine, which is released by brain cells. Acetylcholine is involved in the transmission of nerve impulses, and Alzheimer's patients produce too little of it.

Larry Wang is not sure how RB 1 works, but says it seems to have no side effects and could be a very useful drug for Alzheimer's patients; he has taken out a patent on its use to treat that and similar afflictions. He had no special funding for his research, but says that the medical profession in Canada is beginning to take an active interest in the potential of ginseng and other traditional medicines.

FIELD TRIPS



1992 MAPLE SUGARBUSH TRIP

DATE : SATURDAY, MARCH 28
WEATHER: COLD & DRIZZLY, THEN SUNNY.
PARTICIPANTS: NOT EVEN ONE SINGLE PERSON
TRIP LEADER: RICK BALLARD

The subject of these studies is American Ginseng, *Panax quinquefolium*, which grows from Minnesota southwards and extends into Canada at least as far east as Quebec. It requires rich loam and forest shade. There is also Dwarf Ginseng, *P. trifolium*, which is found in similar habitats, and occurs in intervale and rich forest soil in Nova Scotia. Dwarf Ginseng is also known as ground-nut, from its small edible root.

Asian ginseng, *Panax ginseng*, has been cultivated for centuries, and credited with almost mythical powers. These were regarded with disbelief in the west, but wild American Ginseng was nearly exterminated when people dug it for sale to Oriental markets. There are well established commercial fields in the United States, some of which are growing *P. ginseng*. It is a fussy crop, and takes five years to develop roots large enough for harvest.

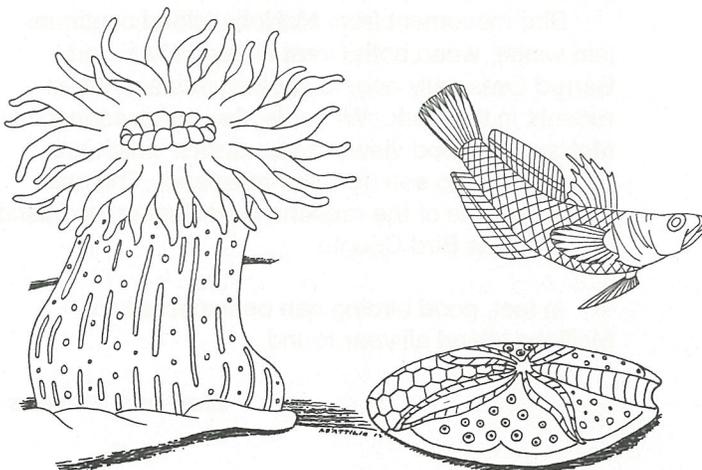
It's reported that some farmers in Prince Edward Island are now considering ginseng as a replacement crop for tobacco.

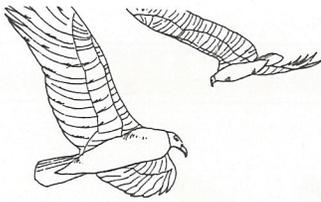
From two articles by Lorraine Brown in Canadian Science, Vol. 10, No. 17, January 1992, plus some local notes.

The sugarbush trip this year was postponed one week, due to the unseasonal cold having delayed sap production. On the usual date, around March 21, a survey of maple sugar producers found that they were not getting any sap. However, a few warm days and cold nights soon fixed that.

After waiting an hour at the museum for the 20 registrants, the HFN convoy left for Kempton in a light drizzle. As I approached the sugarbush, the drizzle stopped and the sun finally broke through the clouds. The dirt road was much better than last year. I could smell the maple sap as I drove up to the building, which was swathed in the sweet smelling steam. When I entered the building, the operator was surprised at the small size of the HFN group, as I had given him a rather larger number in a phone call the previous day. Luckily, he agreed to give me the grand tour of the newly renovated apparatus anyway. After having tasted some syrup fresh from the spout and acquired a years supply of maple syrup and maple butter, the group went on a short trip through the sugarbush itself, to see the latest in vacuum assisted sap acquisition technology, where the sap goes directly from the trees to the boiler. Due to the small size of the group, it was decided not to attend the Maple Supper and everyone went home.

Rick Ballard





BLOMIDON SPRING WILDFLOWER TRIP

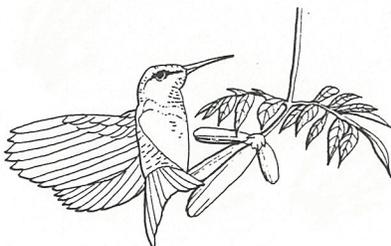
DATE : SATURDAY, MAY 16, 1992
**WEATHER : SUNNY 5 C, WARMING TO
18 C**

PARTICIPANTS : 25
INTERPRETER : RICK BALLARD

A cool morning turned into a warm afternoon for this year's well attended spring wildflower expedition. Due to the unusually late and cold spring, the expected large number of wildflower varieties were not in evidence. The Purple Trilliums, always in bloom on previous trips around the same date, were not even unfurled.

However, we did discover a few of the more hardy varieties. The Wild Leeks, found in only a couple of places in NS, were incredibly abundant, and seem to be rapidly expanding every year. Further on, scattered Spring Beauties were found to be in bloom. For lunch the group stopped at a large intermittent pool to see the rare freshwater Fairy Shrimp, several of which were captured in a jar for general perusal, then returned to freedom. On the trail again, we entered an area of open hardwood forest, where groups of Dutchman's Breeches were found, almost always at the bases of trees. Of the many plants seen, only a few were in bloom. The only other wildflowers seen were a few White Violets. Very green and fresh looking were last years fronds of Christmas Fern and some of the Wood Ferns.

After the four hour hike we engaged in a lively discussion trying to figure out how far we walked according to a park map at the end of our walk. It appeared to be about 8 to 10 easy kilometers.



Rick Ballard

NATURAL HISTORY

THE BIRDS OF MCNABS ISLAND

Islands the world over are noted as places where bird populations differ from those found on the adjacent mainland. Sometimes these differences are quite striking, as in the Galapagos Islands, while in other circumstances the differences are less noticeable.

McNabs Island is no exception to this rule, though it is situated close to the mainland on two sides. In summer it is an important breeding ground for the Great Blue Heron, a sensitive species which establishes nesting colonies in isolated areas. These colonies range in size from a few pairs of breeding birds to hundreds of pairs. Surprisingly, the nests are usually built in the tops of trees; their construction is so flimsy that a single careless visitor to a heronry can cause eggs and young to tumble to the ground when the adults are spooked off their nests.

Roger Pocklington, a local birder who has been visiting McNabs Island for 25 years, reports that there is a wide diversity of bird life there. He says "One would have to get in the car and drive quite a way to see the same number of bird species as can be seen on McNabs." Besides habitat for a variety of woodland birds, there is a fresh water pond which attracts waterfowl, including the uncommon Northern Shoveller.

In fall, a large number of birds use the island as a migratory stop-over; many of these are common species but there are also rarities such as the Peregrine Falcon. Fall is also the time to see small birds flying across the water to Point Pleasant Park, to which McNabs contributes diversity by acting as a giant stepping stone or gateway.

Bird movement from McNabs Island continues into winter, when both Great Horned Owls and Barred Owls sally over to capture rats and other rodents in the Park. Winter is also the season to visit McNabs for good views of sea ducks, which are often difficult to see from the mainland. The sea ducks are one of the reasons for including the island in Christmas Bird Counts.

In fact, good birding can be expected on McNabs Island all year round.

Clarence Stevens II

HALIFAX AST Z+4

TIDE TABLES

1992

JULY-JUILLET

AUGUST-AOUT

SEPTEMBER-SEPTEMBRE

Day	Time	Ht./ft.	Ht./m	Jour	Heure	H./pi	H./m	Day	Time	Ht./ft.	Ht./m	Jour	Heure	H./pi	H./m	Day	Time	Ht./ft.	Ht./m	Jour	Heure	H./pi	H./m
1	0230	-0.1	.0	16	0300	.6	.2	1	0350	-0.3	-0.1	16	0330	1.0	.3	1	0515	.6	.2	16	0405	1.4	.4
	0830	5.8	1.8		0905	5.5	1.7		0950	6.5	2.0		0945	5.7	1.7		1055	6.3	1.9		1015	5.7	1.7
WE	1445	1.0	.3	TH	1510	1.4	.4	SA	1625	.7	.2	SU	1550	1.3	.4	TU	1755	.7	.2	WE	1645	1.2	.4
ME	2035	6.3	1.9	JE	2115	5.6	1.7	SA	2205	6.2	1.9	DI	2200	5.3	1.6	MA	2320	5.6	1.7	ME	2240	5.1	1.6
2	0320	-0.2	-0.1	17	0335	.8	.2	2	0445	.0	.0	17	0400	1.1	.3	2	0610	1.1	.3	17	0445	1.6	.5
	0925	6.0	1.8		0945	5.5	1.7		1040	6.5	2.0		1015	5.6	1.7		1140	5.9	1.8		1055	5.5	1.7
TH	1540	1.0	.3	FR	1545	1.5	.5	SU	1725	.7	.2	MO	1630	1.3	.4	WE	1855	.8	.2	TH	1735	1.3	.4
JE	2130	6.3	1.9	VE	2155	5.5	1.7	DI	2255	6.0	1.8	LU	2235	5.1	1.6	ME				JE	2325	4.9	1.5
3	0415	-0.2	-0.1	18	0405	.9	.3	3	0540	.3	.1	18	0435	1.3	.4	3	0010	5.2	1.6	18	0535	1.9	.3
	1015	6.2	1.9		1020	5.5	1.7		1125	6.3	1.9		1050	5.5	1.7		0710	1.4	.4		1135	5.4	1.6
FR	1640	1.1	.3	SA	1620	1.5	.5	MO	1825	.8	.2	TU	1710	1.4	.4	TH	1230	5.5	1.7	FR	1840	1.4	.4
VE	2220	6.2	1.9	SA	2230	5.3	1.6	LU	2345	5.6	1.7	MA	2310	4.9	1.5	JE	1955	1.0	.3	VE			
4	0510	.0	.0	19	0435	1.1	.3	4	0635	.7	.2	19	0510	1.5	.5	4	0105	4.8	1.5	19	0010	4.8	1.5
	1100	6.2	1.9		1055	5.5	1.7		1210	6.0	1.8		1125	5.4	1.6		0810	1.7	.5		0640	2.1	.6
SA	1745	1.1	.3	SU	1705	1.5	.5	TU	1925	.9	.3	WE	1805	1.4	.4	FR	1325	5.1	1.6	SA	1220	5.3	1.6
SA	2310	5.9	1.8	DI	2305	5.1	1.6	MA			ME	2350	4.8	1.5	VE	2050	1.1	.3	SA	1945	1.4	.4	
5	0605	.2	.1	20	0510	1.3	.4	5	0035	5.2	1.6	20	0600	1.7	.5	5	0215	4.6	1.4	20	0110	4.7	1.4
	1150	6.1	1.9		1125	5.4	1.6		0735	1.1	.3		1200	5.3	1.6		0910	1.9	.6		0800	2.2	.7
SU	1850	1.1	.3	MO	1750	1.6	.5	WE	1300	5.6	1.7	TH	1900	1.5	.5	SA	1430	4.9	1.5	SU	1320	5.2	1.6
DI				LU	2345	4.9	1.5	ME	2020	.9	.3	JE			SA	2145	1.2	.4	DI	2050	1.2	.4	
6	0005	5.6	1.7	21	0555	1.5	.5	6	0135	4.8	1.5	21	0035	4.6	1.4	6	0330	4.5	1.4	21	0220	4.7	1.4
	0700	.5	.2		1200	5.3	1.6		0835	1.4	.4		0655	1.9	.6		1010	2.0	.6		0910	2.1	.6
MO	1240	6.0	1.8	TU	1840	1.6	.5	TH	1355	5.3	1.6	FR	1250	5.2	1.6	SU	1540	4.9	1.5	MO	1435	5.3	1.6
LU	1950	1.0	.3	MA				JE	2120	1.0	.3	VE	2005	1.5	.5	DI	2240	1.2	.4	LU	2150	1.0	.3
7	0100	5.2	1.6	22	0025	4.7	1.4	7	0245	4.6	1.4	22	0130	4.4	1.3	7	0445	4.6	1.4	22	0350	4.9	1.5
	0755	.9	.3		0640	1.6	.5		0935	1.7	.5		0805	2.0	.6		1100	1.9	.6		1015	1.9	.6
TU	1330	5.7	1.7	WE	1240	5.2	1.6	FR	1500	5.1	1.6	SA	1345	5.2	1.6	MO	1650	5.0	1.5	TU	1555	5.4	1.6
MA	2045	1.0	.3	ME	1935	1.6	.5	VE	2215	1.0	.3	SA	2110	1.3	.4	LU	2330	1.2	.4	MA	2250	.7	.2
8	0200	4.9	1.5	23	0110	4.5	1.4	8	0400	4.5	1.4	23	0240	4.4	1.3	8	0540	4.9	1.5	23	0500	5.4	1.6
	0855	1.2	.4		0730	1.8	.5		1035	1.8	.5		0915	2.0	.6		1150	1.8	.5		1115	1.6	.5
WE	1430	5.5	1.7	TH	1325	5.2	1.6	SA	1610	5.0	1.5	SU	1455	5.2	1.6	TU	1740	5.2	1.6	WE	1705	5.7	1.7
ME	2145	1.0	.3	JE	2030	1.5	.5	SA	2310	1.0	.3	DI	2210	1.1	.3	MA			ME	2345	.4	.1	
9	0310	4.7	1.4	24	0205	4.4	1.3	9	0510	4.6	1.4	24	0405	4.6	1.4	9	0015	1.1	.3	24	0555	5.9	1.8
	0955	1.4	.4		0825	1.9	.6		1130	1.8	.5		1025	1.9	.6		0620	5.2	1.6		1215	1.2	.4
TH	1535	5.4	1.6	FR	1420	5.1	1.6	SU	1710	5.1	1.6	MO	1610	5.4	1.6	WE	1235	1.6	.5	TH	1800	6.0	1.8
JE	2240	.9	.3	VE	2130	1.4	.4	DI			LU	2310	.7	.2	ME	1825	5.4	1.6	JE				
10	0425	4.7	1.4	25	0310	4.4	1.3	10	0005	.9	.3	25	0515	5.0	1.5	10	0055	1.0	.3	25	0040	.2	.1
	1055	1.6	.5		0930	1.9	.6		0605	4.8	1.5		1130	1.6	.5		0655	5.4	1.6		0645	6.4	2.0
FR	1635	5.3	1.6	SA	1530	5.2	1.6	MO	1220	1.7	.5	TU	1720	5.8	1.8	TH	1310	1.4	.4	FR	1310	.8	.2
VE	2335	.8	.2	SA	2235	1.1	.3	LU	1805	5.3	1.6	MA			JE	1905	5.5	1.7	VE	1855	6.3	1.9	
11	0525	4.8	1.5	26	0425	4.5	1.4	11	0050	.8	.2	26	0010	.3	.1	11	0125	1.0	.3	26	0130	.1	.0
	1155	1.6	.5		1040	1.8	.5		0645	5.1	1.6		0615	5.6	1.7		0730	5.6	1.7		0730	6.7	2.0
SA	1730	5.4	1.6	SU	1635	5.5	1.7	TU	1300	1.6	.5	WE	1230	1.2	.4	FR	1345	1.3	.4	SA	1400	.4	.1
SA				DI	2335	.8	.2	MA	1850	5.5	1.7	ME	1820	6.1	1.9	VE	1945	5.6	1.7	SA	1945	6.4	2.0
12	0030	.7	.2	27	0530	4.9	1.5	12	0125	.7	.2	27	0100	.0	.0	12	0155	1.0	.3	27	0220	.1	.0
	0620	5.0	1.5		1145	1.6	.5		0725	5.3	1.6		0705	6.1	1.9		0805	5.8	1.8		0815	6.8	2.1
SU	1245	1.5	.5	MO	1735	5.8	1.8	WE	1340	1.4	.4	TH	1325	.9	.3	SA	1415	1.1	.3	SU	1450	.3	.1
DI	1820	5.5	1.7	LU				ME	1930	5.6	1.7	JE	1910	6.3	1.9	SA	2020	5.5	1.7	DI	2035	6.3	1.9
13	0115	.6	.2	28	0030	.4	.1	13	0200	.7	.2	28	0150	-0.2	-0.1	13	0225	1.1	.3	28	0305	.3	.1
	0705	5.1	1.6		0630	5.3	1.6		0805	5.5	1.7		0755	6.5	2.0		0835	5.8	1.8		0855	6.8	2.1
MO	1330	1.5	.5	TU	1245	1.3	.4	TH	1410	1.4	.4	FR	1415	.6	.2	SU	1450	1.1	.3	MO	1540	.3	.1
LU	1910	5.6	1.7	MA	1835	6.1	1.9	JE	2010	5.6	1.7	VE	2005	6.5	2.0	DI	2055	5.5	1.7	LU	2125	6.2	1.9
14	0155	.5	.2	29	0125	.0	.0	14	0230	.8	.2	29	0240	-0.3	-0.1	14	0255	1.2	.4	29	0355	.6	.2
	0750	5.2	1.6		0725	5.7	1.7		0840	5.6	1.7		0840	6.7	2.0		0910	5.8	1.8		0940	6.5	2.0
TU	1405	1.4	.4	WE	1340	1.0	.3	FR	1445	1.3	.4	SA	1510	.5	.2	MO	1525	1.0	.3	TU	1630	.4	.1
MA	1950	5.6	1.7	ME	1930	6.3	1.9	VE	2050	5.6	1.7	SA	2055	6.4	2.0	LU	2130	5.3	1.6	MA	2210	5.9	1.8
15	0230	.6	.2	30	0210	-0.3	-0.1	15	0300	.9	.3	30	0330	-0.1	.0	15	0330	1.3	.4	30	0445	1.0	.3
	0830	5.4	1.6		0815	6.1	1.9		0910	5.7	1.7		0925	6.7	2.0		0940	5.8	1.8		1025	6.2	1.9
WE	1440																						

NATURE NOTES

Released after a long winter, members had a lot of nature notes for the May meeting. Among them -

The ice around Antigonish moved out in one day, and the loons began to move back

The Medway Spring Peepers began to sing on May 2

Grackles arrived in Halifax over the weekend (April 30 - May 3)

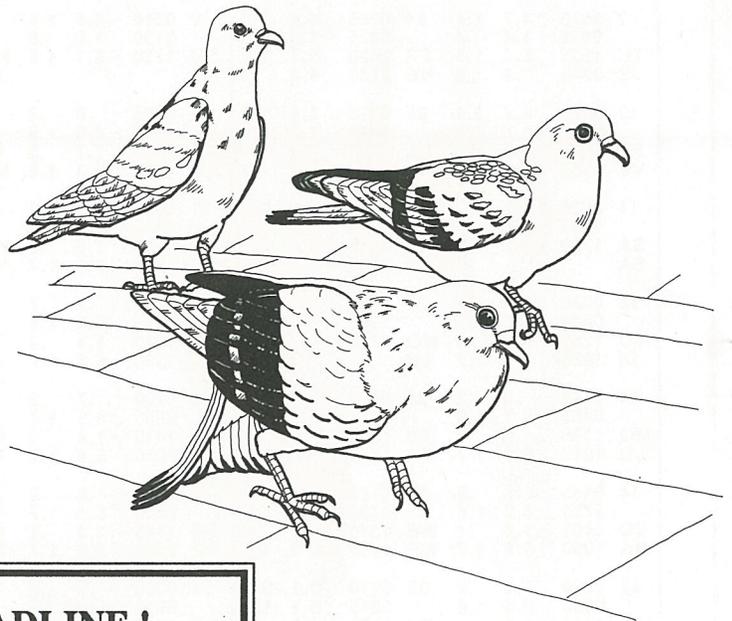
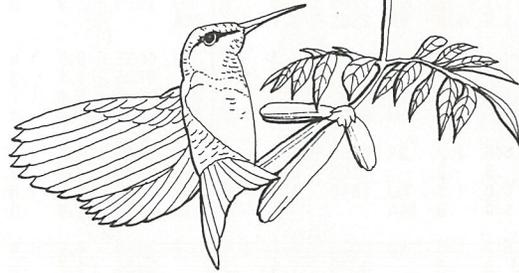
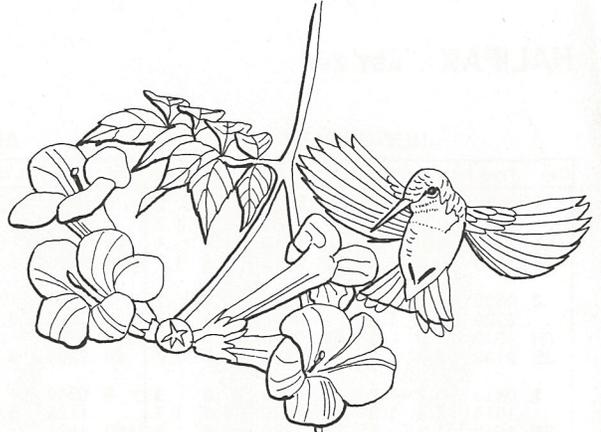
The first Osprey was seen on Easter Sunday (April 19)

Mayflowers were in bloom

A Great Horned Owl nest on a power pole right by the Kearney Lake trail had young in it

An Indigo Bunting was seen in Eastern Passage and a Cardinal hen in Spryfield

Piping Plovers are, expectably, back on Conrad's and Martinique beaches



! NEXT DEADLINE !
September 1 for October Issue
Contributions to the Editor, HFN
c/o NS Museum or phone 455-8160