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BSCE/IO

Further Lapwing Investigations on Beauvechain Airport.

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At the previous meeting of the BSCE, Mr. Louette reported about 1973 investigations on Beauvechain Airport. The investigations included the establishment of long grass isles at both sides of the main runway, and a weekly record of the distribution of lapwings. Virtually no birds were seen in the treated part, except a few members of a minor group at the edge of the test zone. However, most lapwings were seen on farmland and not on grass. It was observed that they prefer some plots more than other ones, and it was suspected that they favour the same fields every year.

Therefore, to be sure about the effectiveness of the treatment, the experimental plots have been interchanged in I974. We maximalized the number of observations in order to obtain a continuous picture of the day to day variations, and to be able to point out possible influences of cultures and soil characteristics. We got the chance that last winter was very mild, so we had a very prolonged observation period, unlike in I973, when all lapwings were driven away by an early, abundant snow-fall.

The treatment itself has been simplified in so far that the isles have been replaced by alternating strips of short and long grass along the second runway. Each strip was 1.80 m wide ; the length of the grass was about 70 cm at the end of the summer.

Results.

1. Fluctuations of numbers during the observation period.

The first peak seems to represent a regular migration wave. It is followed by a nomadic phase with irregular fluctuations (see App. A). These variations are not caused by movements between the airfield and the immediate surroundings, since peaks in- and outside the airfield coincide. There even exists a correlation with numbers of lapwings present at Zaventem National Airport (at 26 km). The whole curve seems to be the result of a superposition of different biological cycles (e.g. seasonal and lunar), influenced by meteorology. This yields complicated oscillations, which we are only just beginning to unravel.

2. Effectiveness of the long-grass strips (App. B).

The treatment seems to be effective in keeping birds away. The small number in the experiment of 1973 was seen, in fact, in a partial blank. In 1974, the experimental plot has been manured erroneously. This caused the grass being laid towards the end of the observation period. The diminishing of the screening effect might have been the reason that a few birds were on the plot in february '75.
The advantage of our method is, that it is relatively simple. Besides, the strips of long and short grass could be mutually changed every year in order to maintain the grass in a good condition. In itself, however, the method is not sufficient to remove all lapwings out of the area, since most of them occur on tillage.

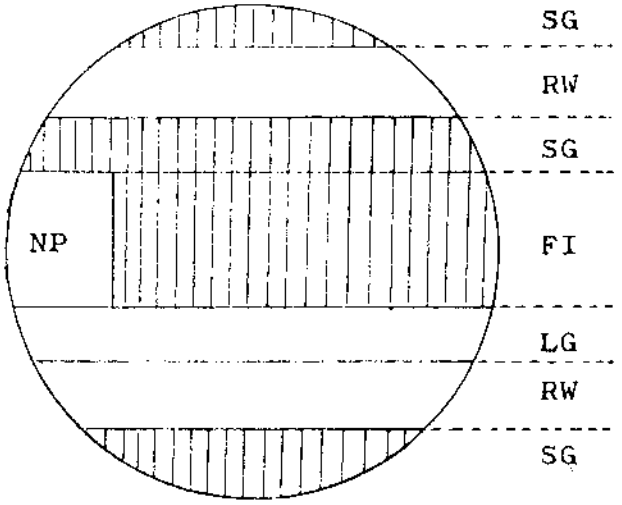
3. Plot-bound preferences.

Within the preferential grounds may exist some more or less favourable features that influence the choice by the birds, and even may cause their absence in a part of the plot.

fig. : Diagram of a preferential plot.

Lapwings were seen only in hatched parts.

SG short grass
RW runway
FI field
NP neglected pasture
LG long grass

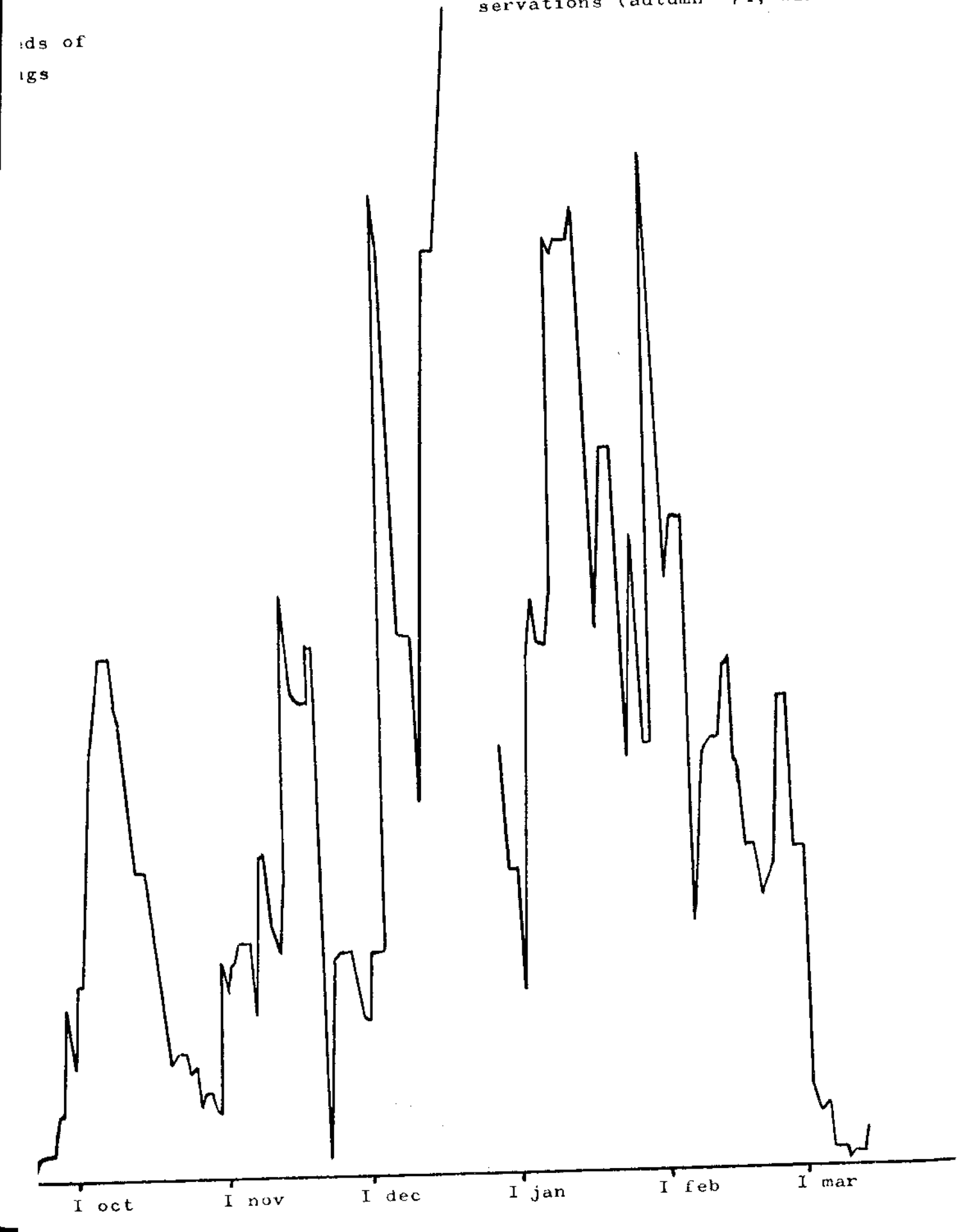


The preferences for different plots change with time and meteorology (e.g. temperature, precipitation). Thus the percentage of lapwings on grass roughly increases as autumn advances.

The general preference may be caused by soil characteristics. Most lapwings were found on imperfectly drained soils. Other soil characteristics may be important, but they have not yet been examined.

We could not detect a marked influence of different cultures upon the presence of lapwings after harvest. The only important thing here seems to be that sugar-beet keeps the field covered until late in the autumn. Growing sugar-beets might cause a drop in total numbers of lapwings, especially in early, severe winters.

App. A : Number of lapwings on Beauvechain airport : moving average of 7 days over 97 observations (autumn '74, winter '75)



App. B : Long grass/short grass experiment. Number of lapwings per ha, per IO observations, in the experimental plot (long grass isles in I973, strips in '74-'75) and in the control (short grass, near second runway in '73, near main runway in '74-'75).

		experimental plot	control
I973	oct	0.00	52.94
	nov	0.65	0.00
I974-'75	nov	0.00	0.33
	dec	0.00	35.7I
	jan	0.00	38.47
	feb	1.29	I5.84
	mar	0.00	I.46

App. C : Number of lapwings (per ha, per IO observations) on different soils, with indication of previous cultures for distinct plots. Drainage phases : b = well drained ; c = moderately well drained ; A = well to imperfectly drained (complex) ; D = moderately well to imperfectly drained (complex).

culture	plot nr.	b	c	A	D	UNKNOWN	ALL SOILS
Sugar-beet	I					3.89	3.89
	2					I5.99	I5.99
Σ_{beet}						I0.49	I0.49
Beans	3	II.95					II.95
	4	59.60					59.60
	5		0.58				0.58
Σ_{bean}		29.70	0.58				I6.35
Cereals	6	0.99					0.99
	7		I2.79				I2.79
	8			I8.35			I8.35
	9				74.35		74.35
	I0				I4.I8		I4.I8
	II					4.08	4.08
	I2					2.79	2.79
	I3					9.I8	9.I8
	I4					0.00	0.00
Σ_{cer}		0.99	I2.79	I8.35	22.35	2.25	II.37
$\Sigma_{cult.}$		I6.43	4.07	I8.35	22.35	6.06	I2.69