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LAB REPORT #114

**CROP FORMATION:
EHLEN, GERMANY - JULY, 1998**

A 60m -long double-spiral (downed-crop paths about .7m wide; standing crop between downed paths about 2m wide) in rye, with associated chaotically-downed crop in same field--in a valley, ringed by microwave tower transmitters, where formations regularly occur. Aerial photo: Wolfgang Schöppe; center-swirl photo: Andreas Müller.





LEFT: Photo taken while sampling inside center circle of Southern spiral (7/12/98) showing one of several massive microwave-transmission towers which ring the valley in which this (and other) crop formations have occurred near Kassel. (KS-04-125)

BELOW: Andreas Muller (in car) and Wolfgang Ring conferring about sampling strategy (7/12/98).



Crop Formation:
Ehlen, GERMANY - July, 1998

Lab Code: KS-04-125

Event Location: Ehlen (near Kassel), central Germany

Date Occurred: Not known

Date Discovered: July 2, 1998

Date Sampled: July 12, 1998

Materials Sampled: Rye (*Secale cereale*) plants and soils

Sampled By: Andreas Müller, Wolfgang Schöppe, Nancy Talbott, Wolfgang Ring

Formation Characteristics: Parallel rotating spirals, each 30 meters in diameter (overall formation length 60 meters), with chaotically-downed crop present throughout field by time sampling was carried out.

Relevant Findings:

- (1) From a mathematical analysis of aerial photographs (which unfortunately were not precisely orthogonal to the crop formation) it was shown that the shapes of the spirals fit closely the equation for a logarithmic spiral

$[r = \exp(a \theta)]$, thus indicating that the energies forming these spirals were organized into a very precise mathematical pattern;

- (2) Relative to the submitted control plants, significant node lengthening was found in *both* the downed (+32%) and standing (+30%) formation plants;
- (3) The fact that the level of node expansion in the standing formation plants was at about the same level as that found in the downed formation plants clearly demonstrates that this node change was due to the heat-producing energy within the plasma vortex system (probably microwave energy)—and not the result of gravitropism;
- (4) Major splits and expulsion cavities were found in 27% of the downed formation plants and in 3% of the standing formation plants (with 0% found in the control plants);
- (5) The levels of magnetic material found in the soil within and immediately around the formation were more than 10 times higher than the amount which can be expected (0.4 mg./g-soil) in normal soil;

- (6) Distribution patterns of magnetic material in the soil within, and immediately around, the formation were compatible with a model dealing with the physics of suspended particles thrown centrifugally from a rapidly rotating vortex system;
- (7) Detailed seedling-growth studies revealed a significant decrease (-18%) in the downed formation plants and a significant (+14%) increase in the standing formation plants, thus providing another clear indication that the energy which caused the node length increases was entirely separate from the energy component which influenced the seedling growth.

Results & Discussion:

A total of 47 sample sets (about 630 plants) were examined for node-length variations. In the formation sample sets were taken along a North-South diameter, with alternate sets obtained from downed and standing sections of the southernmost spiral (see Fig. 1). The node-length data, summarized in Table 1, have been organized with relation to specific sampling regions.

Table 1:
Node-Length Data - Ehlen, Germany

Sample Location	Node Length ave.	s.d	# of Plants	% Change	Significance
All Control Plants	2.69	0.31	174	--	--
Formation, downed	3.56	0.39	201	+32.3	P < 0.01
Formation, standing	3.50	0.69	134	+30.1	P < 0.01
Chaotically-downed	5.57	0.49	80	+107.1	P < 0.01

There are several important points to be made concerning the data above. First, it is important to note that the node expansion levels in all the formation plants (both downed and standing) are significantly higher than in the control plants. More important is the fact that *both the downed and standing plants* have essentially the same level of node expansion—thus clearly showing that the increase in node length in the downed plants is not the result of gravitropism¹ (the natural response of downed plants to reorient themselves in response to gravity). Additionally, the high node-length increase found in the chaotically-downed plants is typical of our findings in multiple other chaotically-downed formations, where node-length increases *typically are greater* than those found in more "geometric" events.

Soil samples taken at the plant sampling sites disclosed levels of magnetic material ranging from 1 to +5 mg./g-soil—all levels higher than the maximum normal background level (0.4 mg./g-soil) expected in soils. Microscopic examination revealed the usual large spherical particles, mixed with irregular particles, of presumptive magnetite (as observed in many other crop formations), with many fine magnetic particles mixed in with chunks of soil. The magnetic drag data in Table 2 are also organized according to sample location.

Table 2:
Magnetic Drag Data - Ehlen, Germany

Sample Location	Magnetic Material (mg./g-soil)		# Sample Sets
	ave.	s.d.	
Control Soils	3.08	2.76	14
Formation, downed areas	1.43	1.21	15
Formation, standing areas	4.86	7.19	10
Chaotically-downed areas	5.87	3.40	3

Here we find that the amount of magnetic material in the soil is lower in the downed-plant areas of the spiral and higher in soil from the standing-plant regions than it is in the control soil from outside the formation altogether. Although at first consideration these results may seem paradoxical, they are in fact in complete agreement with a model formulated from the physics of centrifugal forces, operating within a rapidly rotating plasma vortex system. In many crop formations² we find that the distribution of magnetic particles is higher in soils immediately *outside* the flattened crop than it is in soils inside, a situation predicted by the physical model: at the edge of the rotating system the circulation, or vorticity, drops to zero, and the momentum of the particles carries them just outside the vortex where they are deposited in the standing crop. This result is clearly shown here, where the soils from the standing-crop regions of the spiral reveal markedly increased magnetic-particle concentrations. Due to the very complex energy interactions within the "chaotically-downed" regions we have found that the distributions are not possible to predict.

Germination studies of seeds from both downed and standing plants inside the spiral formation, from the standing control plants outside the formation, and from areas of chaotically-downed crop also outside the spiral formation provided another clear demonstration of the complex interactive energies responsible for many crop formations. The data in Table 3 summarize seedling growth differences from the various sampling locations.

Table 3:
 Seedling Growth at 6 Days - Ehlen, Germany

Sample Location	Seedling Ht. (cm)		# Plants	% Change	Significance
	ave.	s.d.			
Controls	6.91	4.58	240	--	--
Spiral, downed	5.69	4.45	220	-18%	P<0.05
Spiral, standing	7.85	3.80	180	+14%	P<0.05
Chaotically-downed	6.79	4.83	40	-2%	N.S.

In the downed plant areas of the Southern spiral the microwave component of the causative energy system produced a significant growth *reduction* in the germinating seedlings, whereas in the standing regions the ion-electron component induced a significant growth *increase*, overriding the microwave effect.

As the energy interactions indicate, there is a precision in the outlay of these energies in the spirals. The degree of this precision is shown by mathematically analyzing the spiral patterns. [These data were extracted from the aerial photographs, even though it was realized that some degree of error would be introduced due to the fact that the photographic axis was only approximately orthogonal to the field surface.]

As a first approximation, we examined the mathematics of a logarithmic spiral, given by,

$$r = \exp(a\theta) \tag{1}$$

where r is the radial distance from the center of one spiral, a is a constant, and θ the angle of rotation. Arbitrary coordinate lines were inserted on the photograph of the spiral. Taking the logarithm of both sides of equation-1 and rearranging we obtain,

$$a = \log_e(r)/\theta \tag{2}$$

from which we can examine the degree to which a remains constant over the spiral arms. The radial distances were taken at $\pi/2$ intervals of θ and a calculated from equation-2. From the center to 2.5π rotations the photographs were not very clear (there appeared to be some degree of turbulence); therefore, the analysis was conducted from 3π to 10π rotations, which provided $N=15$ calculations of a .

This gives a mean value of $a = 0.15$ (s.d. of 0.05), clearly suggesting that the spirals are logarithmic.

Whenever Nature follows a basic mathematical function it implies that the energies involved in the process are of a fundamental nature, and organized with great precision.

¹Levengood, W.C. and Talbott, N.P. (1999) *Dispersion of energies in worldwide crop formations*, Physiologia Plantarum 105: 615-624.

²Another example is presented in *Lab Report #113: Crop Formation: Midale, Sask., CANADA*, BLT Research Team (September, 1999).

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LOCATION: Ehlen (nr. Kassel), GERMANY

Fig. 1: Soil & plant field-sampling diagram (KS-04-125)

CROP: Rye

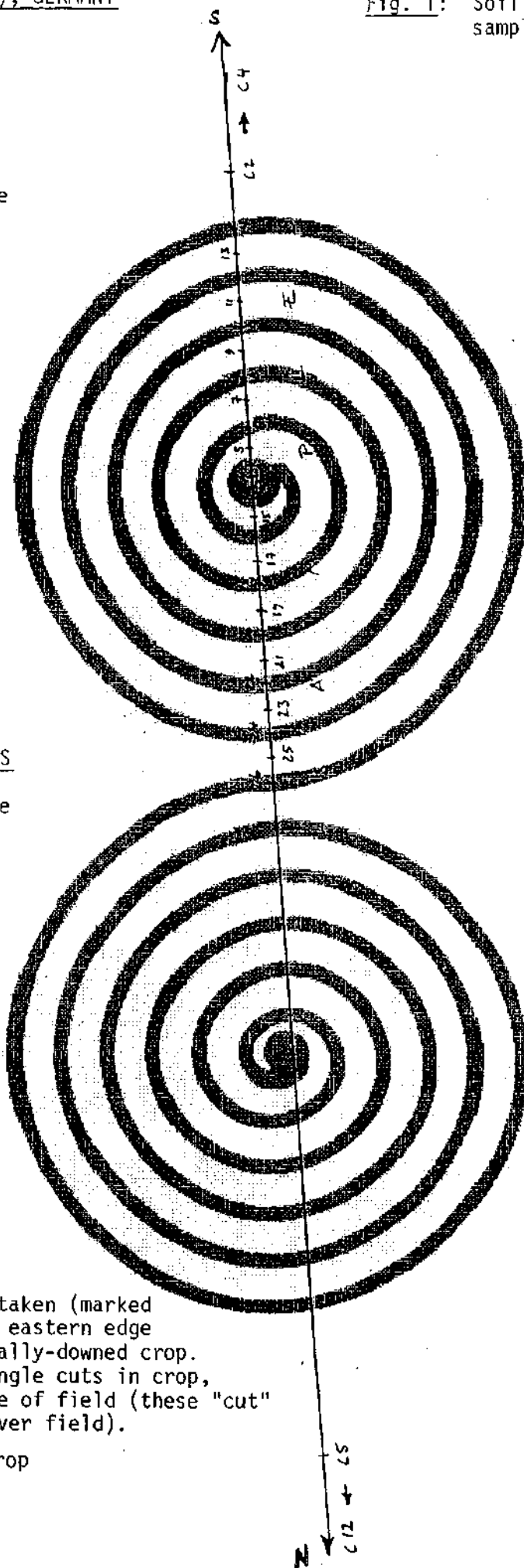
DATE FOUND: July 2, 1998

" FORMED: ?

' SAMPLED: July 12, 1998

SAMPLED BY: Andreas Müller
Wolfgang Schoppe
Nancy Talbott

Assistance: Wolfgang Ring



CONTROLS:

C1 = failed

C2 = 2 m outside SOUTH edge

C3 = 8 m " " "

C4 = 27 m " " "

C5 through C8 ALL TAKEN FROM
STANDING CROP INSIDE TRAMLINES
ON NORTHERLY EDGE

C5 = 9-10 m outside NORTH edge

C6 = 20 m " " "

C7 = 30 m " " "

C8 = 40 m " " "

C9 through C15 taken from
standing crop in field;

whole field more or less
chaotically downed--NO

STANDING CROP FAR AWAY
FROM AREAS OF DOWNED CROP.

C9 = 50 m outside NORTH edge

C10 = 80 m " " "

C11 = 130 m " " "

C12 = 230 m " " "

C13 = 230 m from EASTERN edge

C14 = 230 m " " "

C15 = 230 m " " "

NOTE: 3 random samples were taken (marked
with greek letters) at eastern edge
of field, from chaotically-downed crop.
RANDOM SAMPLE 3= 45° angle cuts in crop,
taken from Eastern edge of field (these "cut"
stalks were seen all over field).

SHADED area = downed crop

Fig. 2: Additional sampling information & field diagram showing dimensions, by Andreas Muller. (KS-04-125)

SAMPLES

- | | | | |
|-------------------------------|-----|--|--|
| <i>center of South circle</i> | S 1 | ca. 0,2 m away from the southern perimeter inside the southern circle | <i>(6" inside edge)</i> |
| | S 2 | center of southern circle | <i>(center of circle)</i> |
| | S 3 | ca. 0,5 m away (northwards) from the center of the southern circle. | <i>(between center + N edge of circle)</i> |
| | S 4 | ca. 0,2 m away from the northern perimeter inside the southern circle | <i>(6" from N edge of circle)</i> |
| | S 5 | first <u>standing</u> part southwards | |
| | S 6 | first laid down spiral arm southwards | |
| | S 7 | second <u>standing</u> part southwards | |
| | S 8 | second laid down spiral arm southwards | |
| * | S 9 | third <u>standing</u> part southwards !!! IMPORTANT NOTE: *standing, later partly downed !!! | |
| | S10 | third laid down spiral arm southwards | |
| | S11 | fourth <u>standing</u> part southwards | |
| | S12 | fourth laid down spiral arm southwards. | |
| * | S13 | fifth <u>standing</u> part southwards !!! IMPORTANT NOTE: *standing, later partly downed !!! | |
| | S14 | fifth (and last of the southern part of the double-spiral) laid down spiral arm southwards | |
| | S15 | first <u>standing</u> part northwards | |
| | S16 | first laid down spiral arm northwards | |
| * | S17 | second <u>standing</u> part northwards !!! IMPORTANT NOTE: *standing then downed !!! | |
| | S18 | second laid down spiral arm northwards !!! IMPORTANT NOTE: downed right on edge !!! | |
| | S19 | third <u>standing</u> part northwards | |
| | S20 | third laid down spiral arm northwards | |
| | S21 | fourth <u>standing</u> part northwards | |
| | S22 | fourth laid down spiral arm northwards | |
| | S23 | fifth <u>standing</u> part northwards | |
| | S24 | fifth laid down spiral arm northwards | |
| | S25 | sixth <u>standing</u> part northwards | |
| | S26 | sixth laid down spiral arm (connecting segment of the two spirals) northwards | |

