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INTRODUCTION TO LAB REPORT #21

by John A. Burke

Report #21, on a small "outlier" triangular formation shows characteristics important to understanding the crop circle phenomenon. Sampled by Chad Deetken, three sample sets were analyzed -- one from the center of the formation, one from 5 ft. outside and one from 50 ft. outside.

As we have occasionally seen in other formations, blisters were raised on the nodes and holes were blown right through the wall of the wheat stalk (from inside out) only in samples taken from the center of the formation. Thus this is yet another incident indicative of high-temperature heating. (See photos).

As in many previous formations, extreme bending (about 45 degrees) of the 4th node occurred only on samples inside the formation.

Oscillation tests showed change in the electrical conductivity of the bract tissue surrounding the seed, only in the samples from inside the formation. Odds of this being due to chance are one in 5,000.

In contrast to the above changes (which occurred only inside the formation) were the effects on the germination and growth rate of the seeds. Controls 50 ft. outside the triangle showed normal size and growth. Seeds from inside the formation were 30% lighter, 50% shorter,and showed dramatically-delayed growth. Controls sprouted in 4 days while formation seeds took 10. Most interesting of all, however, were results from samples taken only 5 ft. outside the formation from standing crop. These seeds were normal in size but their growth rate was in between the 50 ft. control and the formation sample. This is consistent with a "spillover" effect seen in other formations, where standing crop near the formation is affected but not as strongly as crop inside the formation itself.

In addition it is important to note that this formation indicates that the energies producing the changes in the electrical conductivity of the bract tissue are apparently different from the energies that change germination and growth rates (as indicated by samples 5 ft. outside). This is important new evidence suggestive of yet another level of complexity in the circle-forming energies.

Finally, the was yet another example of how the most dramatic effects on the plant tissues, such as the expulsion holes, are frequently found in the smaller formations -- formations often ignored by researchers in favor of the larger, more complicated ones. Such higher energy density in the smaller formations would be expected if the energy mechanism was an ion plasma vortex. This is due to conservation of angular momentum and can be illustrated by the spin of a figure skater who spins faster as she pulls in her outstretched arms, reducing her effective diameter.

While it may seem to defy common sense that a triangular form could result from an ion plasma vortex, one must first consider the physics of plasma. Known as "magnetohydrodynamics", plasma physics are (as the term suggests) the dynamics of fluids. Whatever turbulence and structure you find in fluids you can expect to find in plasma. American scientists exciting liquid alcohol with sound waves have produced an array of geometric patterns in the alcohol including triangles, squares, and hexagons.

In a 1958 paper in "Nature" Dr. Levengood, working in water, showed that spinning vortex rings sprout smaller, outlying vortex rings that are denser and faster (due to conservation of angular momentum) and therefore hit "ground" first. In addition to being consistent with the data in this report, this pattern of activity matches Michael Chorost's finding that the smaller, outer rings in complex formations are laid down first. (An unpublished 1958 result was the formation of a "ladder" formation in the dyed water.

P.S. A formal scientific paper by Dr. Levengood, summarizing the findings from his years of crop circle research has been accepted for publication by an international, peer-reviewed scientific journal. Publication is expected in a few months.

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RESEARCH REPORT: PINELANDIA BIOPHYSICAL LAB.

LABORATORY Code: KS-01-172

PLANT MATERIAL: Wheat plants and heads (thoroughly dried). The plants were packed and shipped by Ms. Nancy Talbott, Boston, Mass., in a container of sufficient length to prevent the need to bend or fold the plant stems. This close attention to shipping details, allowed quantitative comparisons of the stem node bending.

FORMATION: Devises, U.K. - between June 1-15, 1993. Samples collected by Mr. Chad Deetken, Vancouver, Canada. This formation consisted of an equilateral triangle (see Fig.1) with 6-ft. sides, and isolated from a more complex grouping. The sample locations were as follows:

- #1-center of triangle
- #2-C-1 taken 5-ft. outside triangle
- #3-C-2 taken 50-ft. outside triangle

In Fig.1 are photographs taken by Chad Deetken, of the sites at Devises. The overall formation is shown in Fig.1-A, where the arrow indicates the location of the triangle form discussed here. Fig.1-B shows details of the very complex vortex-like twisting of the plant stems within the triangle region.

LABORATORY EXAMINATION:

I.) STEM NODE EXAMINATION: Each sample group contained between 6-10 plants, and node bending data were taken from nodes 2-5 on each plant. The most striking differences were noted at the node-4 position in the #1 group from the center of the triangle. The previously discussed "expulsion cavities" (Fig.2-A) were observed at the node-4 position, but in addition there was a "blister type" alteration, where the outer fibers of the node appeared to "bubble up" and gave the appearance of a transient, high temperature , superficial heating. These regions are indicated in Fig.2-B by the arrows (black spots are laboratory indexing lines). The degree of node-4 bending, from the vertical position, is listed in Table I., for each of the sample groups.

Table I. Bending at Node-4 Position.

Sample	ave.	s.d.	N-nodes
*1-triangle	43.4	7.0*	10
*2-5 ft. out.	3.0	2.1	6
*3-50 ft. out	5.3	5.5	6

*- P<0.05

2.) OSCILLATION TESTING (BRACT TISSUE)- the OSC, verification test is now applied routinely to all sample sets. The alpha means are listed in Table II.

Table II. Alpha means from OSC data (N=30 test cycles).

Sample	ave.	s.d.	Paired t-value
*1-triangle	0.187	0.085	-6.68 (P<0.0005)
*2-5 ft. out	0.078	0.024	+0.02 N.S.
*3-50 ft. out	0.078	0.051	--------------

3.) SEED GERMINATION AND SEEDLING DEVELOPMENT FACTOR Df-the seed heads on the plants from the *1-triangle set were less than one-half the length of those on the *2 & *3 sample groups. This is the first sample group taken from a formation occurring at this stage of maturity, in which there was an obvious difference in the size of the seed heads. The seed weights from the *1 set were also reduced by more than 30%, compared with the seeds from the *2 & *3 heads.

The germination and seedling growth results summarized in Fig.3-A, provide clear evidence that the formation energies have suppressed seed germination and seedling growth. As one might expect from the above, the greatest reduction in the Df value occurred in the *1-triangle seeds. In Fig. 3-B, where the ordinate scale has been expanded, the Df values for the *1-triangle seeds lie along the abscissa at the 0.00-DF level for the first 10 days. This ten day lag is very unusual for wheat seed germination. For example, the *3-50 ft. controls show (in Fig.3-B) growth at the four day interval.

It is interesting to note in Fig.3-A, that the #2-5ft. samples indicate the "spill over" effect, which has been previously observed in other formation samples. The energy producing the effects on the seed development does not appear to be the same as that producing the changes in the somatic tissues. This is clearly indicated by the fact that the data relating to the somatic tissue alterations, in Tables I and II, show no significant difference between the #3 and #2 sample sets, whereas, in Fig. 3-A the Df value from the #2 data set is significantly lower than the control values.

CONCLUSIONS:

What we have observed here, strongly supports the concept that very intense, organized crop formation energies can occur within relatively restricted regions, and furthermore, they can produce deep seated alterations within the plant tissues. From this study, it appears that all crop formation field workers should take a lesson from Chad Deetken and pay more attention to the small outer formations, and to those downed plant regions that may not be so geometrically appealing.

The pronounced energy effects observed in this restricted, triangle formation, provide very clear indications that these secondary instability products can have higher energy contents than the larger outlying forms. This higher energy density would be expected from the conservation of angular momentum within the secondary instability products from an ion plasma vortex.

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Fig.1 Equilateral Triangle formation at Devises, U.K.-Sample KS-01-172
Photographs by: Chad Deetken

A

Arrow Shows Triangle

B

Detail Inside Triangle---

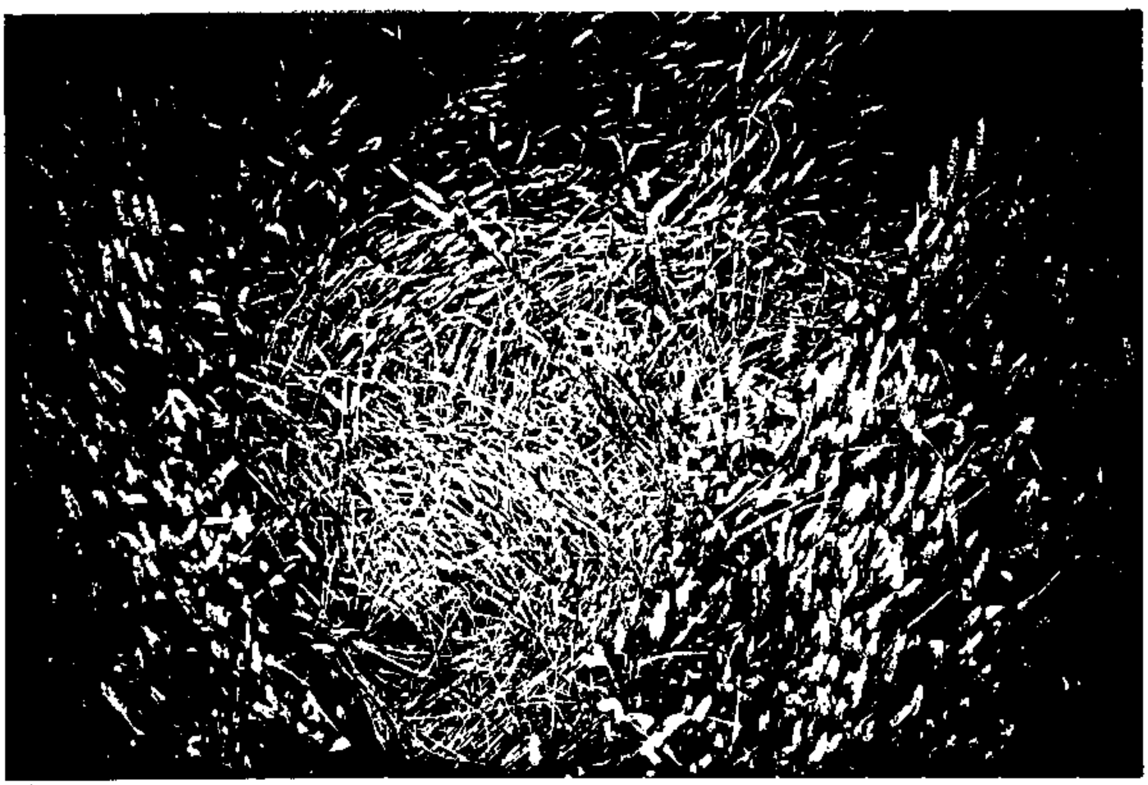


Fig.2 Tissue transformations at node-4 location in triangle form at Devises, U.K. (KS-01-172)

A

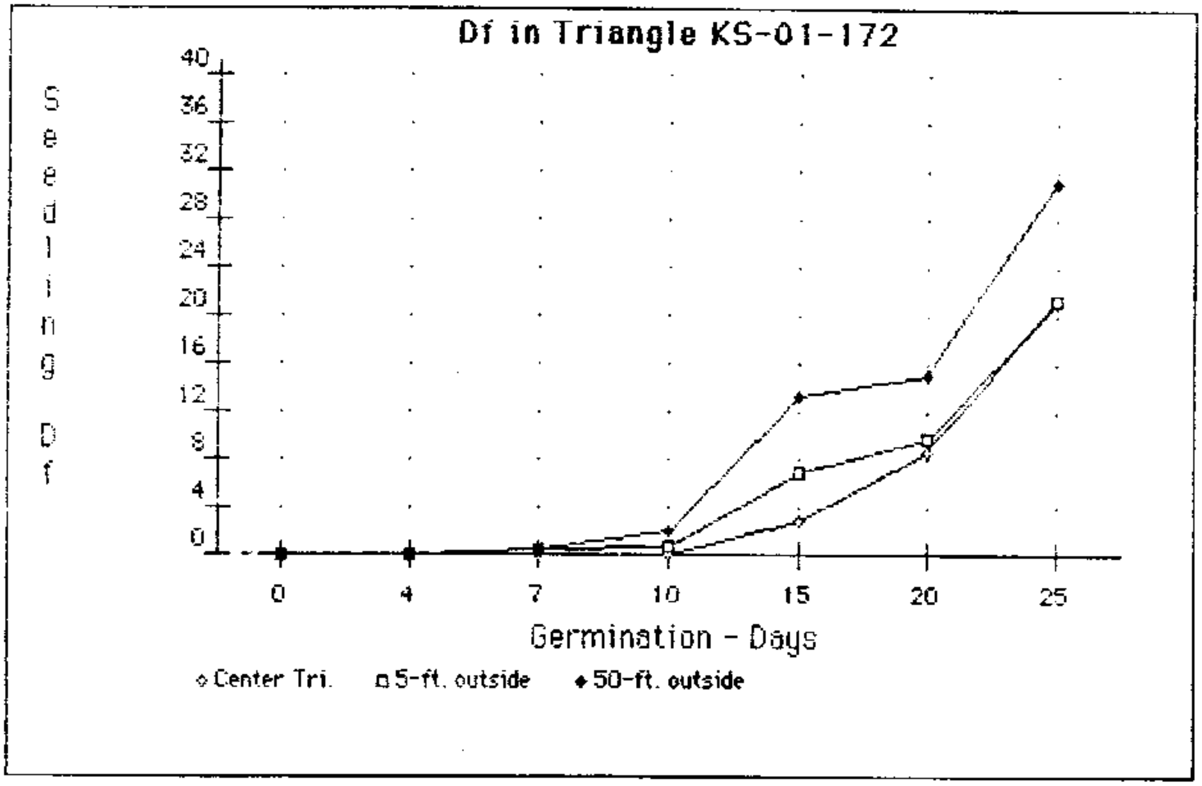
Expulsion cavities-- indicated by arrows

B

"Blister type" cell disruptions -------

Fig.3 Seedling development factor in triangle formation samples from Devises, U.K. (KS-01-172)

A



B