Crop Formation: Bad Axe, Michigan, 1995

Laboratory Code: KS-03-69

Material: Corn stems and seed ears, *(Zea mays)*

Formation: Located near Bad Axe, Michigan, and first observed by farm owner on Sept. 28, 1995 (may have occurred mush earlier than this). Two large ovoid formations (see Fig.2 attached, for aerial photograph from The Detroit News, Oct. 16, 1995).

Sampled: by Mr. William Murphy,3639 Stoneleigh Drive., Lansing, MI 48910 and Dr. David Toth, 2278 Park Lane, Holt, MI 48842.

Laboratory Results:

There are several plant anomalies connected with this crop formation which have not been previously reported. One of these new features shown in Fig.1A (attached), is the appearance of a smooth surfaced, diagonal cut in the plant stem and occurring anywhere from a few inches to around 2-ft. above the root level. The four samples on the left in Fig.1A were taken from the formation, the short section on the far right shows an unsuccessful attempt to produce a smooth cut with a surgical scalpel.

The excised surface on the formation samples are dead black, and this gives the appearance of burned tissue. However, a microscopic examination revealed that the blackened surfaces in Fig.1A are the result of a heavy infestation of the fungus *Ustilago zeae*, commonly called "smut". The burned appearance is caused by the heavy coating of microscopic, black spores. Interestingly enough, the presence of this fungus suggests that a high, transient heating did indeed occur, but of insufficient intensity to cause charring of the tissue. This localized fungal growth is observed in wheat plants (and other species) taken from crop formations in which severe node expansion and expulsion cavities have occurred. Our data indicates (see crop formation Report No.24) that a microwave component of the formation energies produces a rapid heating. This transient heat causes local cell-wall expansion and forces out cytoplasmic components from a depth of several cell layers. This escaping exudate material is rich in amino acids, proteins etc. and when the vapor condenses on the fresh-cut surfaces it provides a rich culture for the fungal growth. Surfaces cut with a mechanical tool do not have condensed

cell exudate and the fungal build-up does not occur or is very minimal. The angles of the cuts on the four stalk samples shown in Fig.1A vary from 31° to 70° off the vertical axis. This variation might be explained by the stalks being bent over at various angles when the excisions occurred.

Germination studies were conducted with the seeds from the formation plants and controls using a standard, paper-roll laboratory procedure. The seedling growth data, taken at seven days development, are summarized in Table I for 20 seed test populations. All samples gave 100% germination.

Table I

Seedling development in corn from the Bad Axe, MI, crop formation (KS-03-69). 7-day growth (N=20)

Sample	Seedling ht. ave.	s.d.	Growth Difference	Statistical Confidence
Control	11.06	1.76	---	---
F1-A	12.54	1.51	+13.4%	P<0.05
F1-B	5.71	1.67	-29.3%	P<0.05
F1-C	9.08	2.47	-17.9%	P<0.05
F2-A	12.32	1.14	+11.4%	P<0.05

In routine germination with hybrid corn it is very unusual to find seedling growth differences greater than a plus or minus 5% deviation within the test groups. Here we find in the formation samples statistically significant differences of negative and positive magnitudes lying far outside the expected 5% range. Thus we have another anomalous situation unique with this crop formation. Generally when we find suppressed growth rates at levels similar to those in sample F1-B (-29%) the seedlings at the 7-day development stage are quite abnormal and exhibit both root and shoot deformities, low germination, and the growth variance is large. As shown in Fig.1B there are no apparent abnormalities other than the slow development rate (compared with controls in Fig.1C). If this slow development were caused by a chemical such as an herbicide the roots would be deformed and the hypocotyls (stems) severely twisted. This germination test was continued to the 14-day development stage and the F1-B seedlings were still of normal appearance, although the growth differences persisted. It should be pointed out that all of the crop formation samples gave normal appearing seedlings at the termination of the germination test.

Comments:

The approximate location of the formation samples are marked on the Fig.2 aerial photograph. It should be noted that the F1-B, suppressed-growth sample was taken at what was called a "fort" location at one end of the large rectangular formation. These areas were described in The Detroit News as Follows; "At each end, there's a "fort" that has been constructed by folding in three or four rows of corn stalks at about the three foot level, forming a rough canopy that a person could crawl beneath." It was also pointed out that associated with these fort areas are hundreds of corn stalks which have been sheared off at levels varying from a few inches to around two feet above the roots.

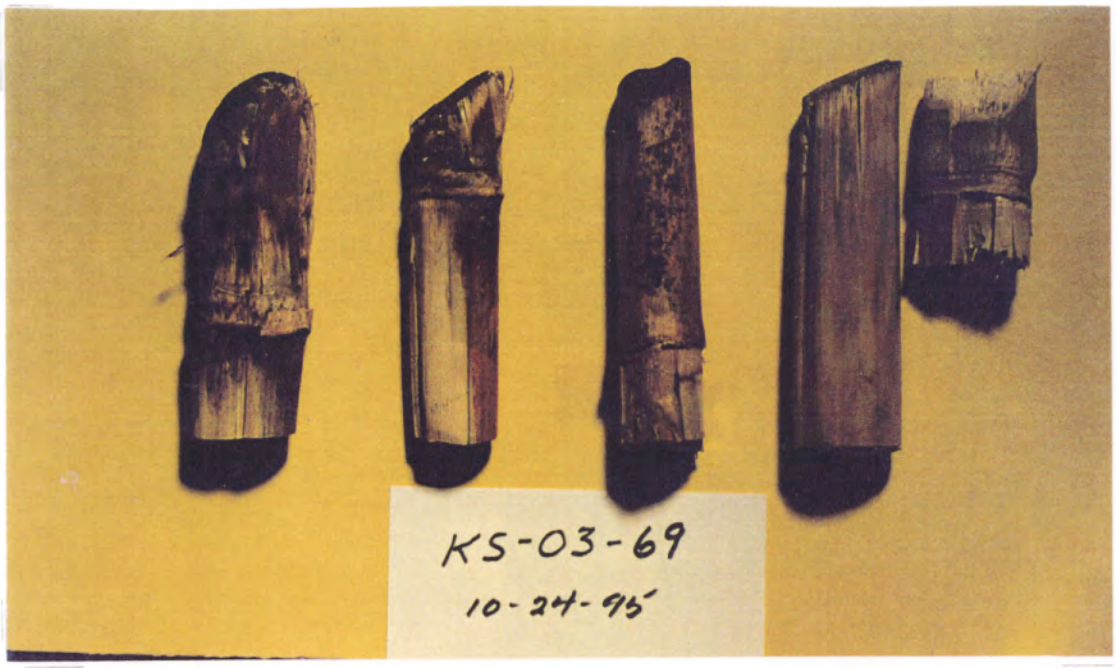
From these observations and the fact that very unusual growth effects were induced in the developing seeds (sample F1-B) it would appear that very intense and turbulent conditions existed within the organized energy vortex system. These internal, compacted vortices have been shown to possess sufficient energy to produce melting in iron meteorite material (reference: W.C. Levengood and J.A. Burke, Semi-Molten Meteoric Iron Associated with a Crop Formation, *Journal of Scientific Exploration*, **9**, pp.191-199, 1995). The nested or interwoven plants which have been described here as a "fort" arrangement, have also been observed in barley, sampled in the U.K., by Barry Reynolds (see Report No. 30). Here they have been described as "nest" formations of tightly interwoven plants. Within these nested regions of barley the stem node expansion was very severe and the growth of seedlings was retarded. In other words, these highly localized nests of sub-vortices exhibit characteristics very similar to those observed in the corn formations discussed in this report.

W.C. Levengood
Pinelandia Biophysical Lab.

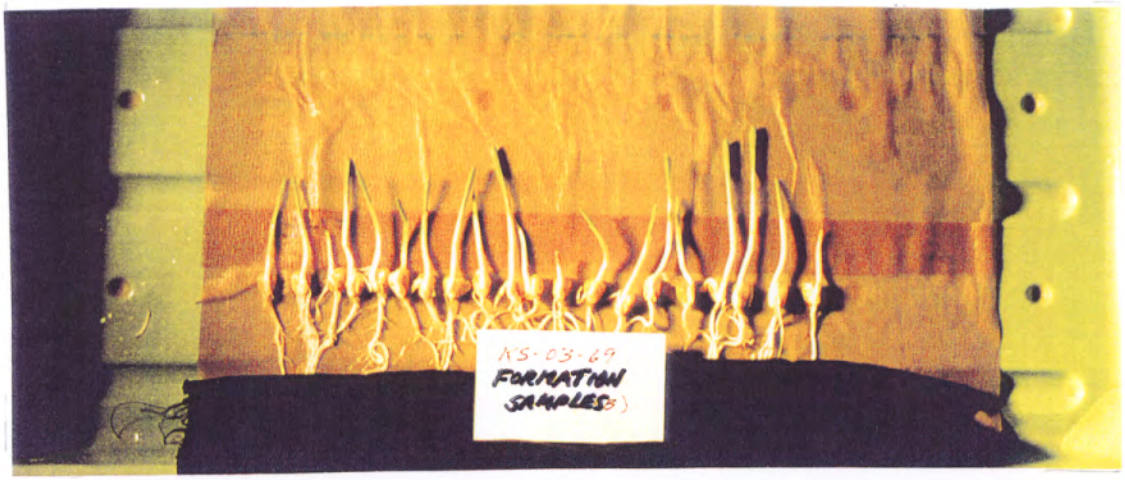
John A. Burke
Am-Tech. Laboratory

Fig.1 Crop formation samples from Bad Axe, Michigan (KS-03-69)
Report No.45 Crop: Zea mays

A.-Diagonal excision on stem of plants- Far rt.,attempt with scalpel.

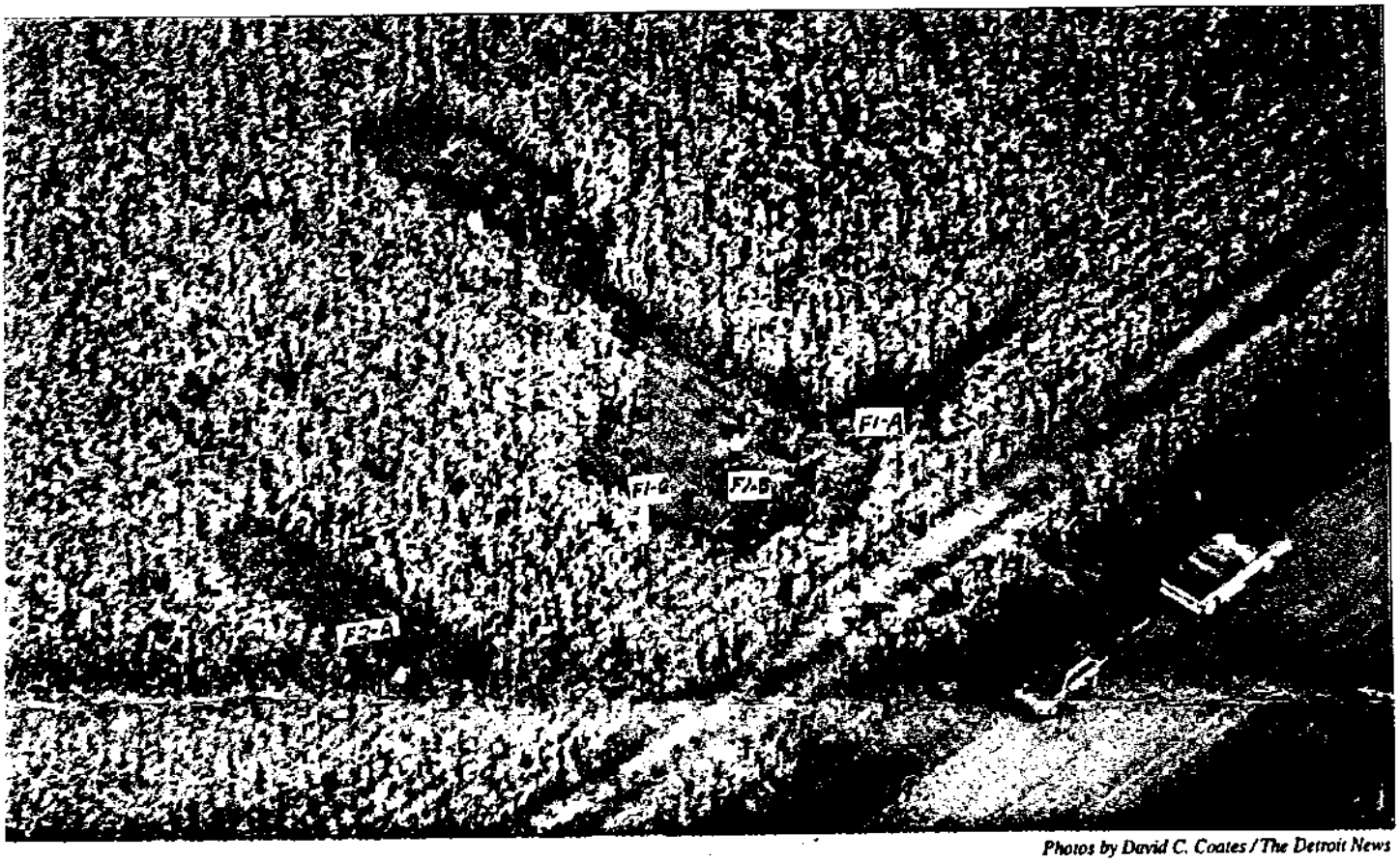


B.-Formation F1-B
7-day seedlings



C.-Control C-1
7-day seedlings

Fig.2 Aerial photo of crop formation in Zea mays, located at Bad Axe, Michigan (KS-03-69)
From The Detroit News, Monday, October 16, 1995.



Photos by David C. Coates / The Detroit News

Samples taken from the four marked regions, plus controls at least 100 yds. from formation. Note that sample F1-B was located at one of the "canopy" sites (see Fig.1).