exposures was repeated every 30 sec, aided by appropriate neutral filters. Step wedges on the 70 mm film allowed a relative, but not absolute, calibration of cloud intensity. At maximum, the ratio of intensity of the central portion of the trail to the sky background was 2·5.

In conclusion, the feasibility of using TEB for high-altitude wind, diffusion or turbulence observations was verified with subjective estimates indicating that in sunlight the TEB trail was at least as bright as the sunlit TMA trail. The 12 min duration agrees closely with our experience with TMA cloud photography at sunrise. It was not possible to compare the brightness of the non-sunlit TEB trail with that of the corresponding TMA trail.

The origin of the yellow-green emission is unknown at this time.

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Sedimentary-edaphic Control Theory of Cyclic Sedimentation

Polarity coincidence correlation was recently applied to a lower Carboniferous sequence from the south of Scotland[1] in an attempt to establish the existence of "a fundamental cycle of about 145 ft. in the vertical change in sea level during the lower Carboniferous period in Great Britain". Some of the geological assumptions made in order to carry out the mathematical analysis are of arguable validity, but of more immediate interest are the conclusions. The authors decided (page 137) that "isostatic readjustments . . . drive the cyclicity". Many other writers[2–6] have appealed to "external" factors to account for cyclicity in Carboniferous sequences. On the other hand, "internal" mechanisms, such as normal sedimentary processes in a deltaic regime, have been invoked[7,8] to produce Yoredale-type cycles. It has also been shown quantitatively[9] that the changes of environment evidenced in Coal Measures cyclic deposits are not regular, either vertically or laterally; and again a sedimentary control has been suggested.

It is not clear just how closely the various types of Carboniferous cycles can be compared, but all theories of origin have one important feature in common. They assume that relative rise of water level brings about the death of the "coal"-swamps. It is this flooding—whether due to a rise in sea level or to subsidence of the area due to isostasy, tectonism, compaction or combinations of these; whether it is slow or sudden—that has occupied the attention of geologists for more than 130 years.

I think that a sedimentary "internal" mechanism is the most likely in Coal Measures sequences. "Delta-switching" or "channel-wandering" can satisfy the need for periodic changes in the sites of deposition of various sediments, the rough vertical order in which they tend to occur and the by-passing of swampy areas where continued forest growth can lead to the accumulation of peat. But there still remains the difficulty of explaining why the rate of accumulation of the peat should cease to keep up with the rate of subsidence. If we assume that flooding causes the cessation of peat-forming conditions we are almost forced back to the solutions given in one of the "external" theories. It is not apparent, for example, that sediment overwhelms the forest swamps, otherwise standing trees, etc., would surely be far more common. Changes in the rates of compaction of underlying sediments are, of course, another possible "internal" mechanism. But are we perhaps looking at the problem the wrong way round? Do we imply that peat accumulation would go on indefinitely if some outside influence did not cause the flooding of the forests responsible for its growth? Might it not be possible that the accumulation of peat slows down of its own accord, fails to keep up with subsidence, and the swamp area is therefore flooded?

There are two obvious ways in which this might be achieved. One is climatic, the other edaphic. The suggestion that repeated climatic changes are the reason for the periodic cessation of peat-forming conditions must be looked at in the context of the considerable lateral and vertical variation in coal-bearing successions[9], as indeed must any theory. The number of times such climatic changes occurred should surely be recorded in the succession. Do we therefore look for the maximum number of cycles present in a given sequence and accept that in most places this sequence will not provide the evidence of climatic changes or concede that even in one coal-bearing facies all the cycles are not produced in the same way? Such problems make edaphic factors worthy of consideration.

It is known, for instance, from studies in both tropical and temperate swamps[10,11] that a thick accumulation of peat can so alter edaphic conditions that a forest vegetation can no longer be supported. Obviously, the accumulation of peat in an area undergoing subsidence must be at a rate sufficient to offset subsidence or flooding will occur. If the vegetation becomes sparser or smaller, because of edaphic factors, then the rate of accumulation of peat must slow down. In this way flooding might take place without the necessity of either increasing the rate of subsidence or raising sea level. Repeated changes of climate would also be unnecessary. Lateral and vertical variations could be expected. Given a delta-coastal plain environment, conditions suitable for forest growth on the delta, and subsidence, a vertical repetition through time of sediments—forest swamps—sediments—forest swamps, etc., seems inevitable. Perhaps more palaeobotanical evidence, rather than recourse to mathematical and geophysical arguments, is required if the mechanism of production of coal-bearing cycles is to be elucidated.

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Newer Granites of Foyers and Strontian and the Great Glen Fault

Kennedy[1] regarded the Foyers and Strontian Granites as "mechanically separated parts of one mass". He interpreted their present separation of 65 miles as one of the