

POSSIBLE APPLICATION OF KITE PHOTOGRAPHY TO ARCHAEOLOGY AND ETHNOLOGY

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The application of aerial photography to archaeology is no new discovery, but it has thus far been limited to larger sites such as those in the Near East, those of the Maya in Central America, and Zimbabwe in Africa. The fact that this technique has not been extended does not mean that it is not equally useful in the investigation of the less spectacular remains. In the case of village sites, cultivated fields, and even Indian mounds, indeed, the outlines as seen from the vertical axis are often the most interesting and important. The reason is rather that the expense of hiring an airplane and trained photographer or, alternatively, of owning and operating the bulky equipment for balloon photography is almost prohibitive. It is quite possible, however, that aerial photographs may be made from kites with equipment costing only fifty or seventy-five dollars, which is well within the reach of the institutions engaged in archaeological investigations in the Midwest, and with the cost of operation limited to the price of film and development. If such photographs should prove satisfactory, there is no reason why aerial records—both before and during excavation—should not be made of every site.

The applicability of kite photography is not limited to archeology; it may be of considerable importance to ethnology as well in providing an easy method of mapping dwelling sites both among nomadic and settled village peoples, and in recording the layout of farms and garden plots. Aerial photographs have already been used in the latter instance in ethnological work in Africa, but kite photography would make it possible for each institution to have equipment for aerial photographs available for the ethnologists it sends into the field.

In both archaeology and ethnology, furthermore, the kite has a considerable advantage over the airplane in that it can operate at much lower altitudes. By mounting the camera at a considerable

distance below the kite, it would be possible to photograph from altitudes low enough to give great detail, and even to use the camera to cover ceremonial activities from the air.

Nor is the idea of taking aerial photographs from kites original either. I believe that it has a rather long history in connection with army observation work. My own acknowledgments, however, must be made to W. Sellers of the Health Department of Nigeria, British West Africa, who described to me the type of equipment used by his department in connection with fever control. Mosquito breeding swamps are photographed from kites before sprinkling them with chemicals.

The camera employed is a light inexpensive folding instrument to which are attached small dry-cell batteries and a solenoid which releases the shutter when the circuit is closed. Actually, since the distances involved are large, a fixed-focus camera of the box type would probably be satisfactory and would be better adapted to the mounting of the necessary accessories. The camera itself is mounted on the cord, some distance below the kite so that it can be rewound and reset after each exposure without having to ground the kite. The switch for the solenoid circuit is mounted on the cord somewhat below the camera in such a way that it can be closed by the pressure of a parachute which is carried up the sting by the wind in the way children send "messages" up to a flying kite. Provision is made so that the parachute is disengaged after closing the circuit, with the result that the circuit is then broken and the strength of the batteries is preserved.

For this work, a folding box kite of the type which can be launched easily in very little wind should be employed. If a small kite of this type is not sufficient to carry the camera equipment, it could be used to aid in launching a larger kite designed to carry most of the burden.

Aside from the advisability of experimenting with different types of kites, there are two main problems to be solved. First, will a simple suspension of the camera be stable enough in the wind, or can another type of mounting be devised so that clear photographs can be obtained? This problem could be partially solved by using a more expensive camera with a high speed shutter. Second, how may the camera be accurately aimed at a desired objective? This will have to be done by flying the kite from a position from which the wind will carry it over the site to be photographed, and perhaps considerable experience will be necessary

before this can be done successfully.

It was my original intention to present this paper only after these problems had been solved, and to illustrate it with examples of kite photographs of Indian mounds. But since academic obligations have already postponed this project for three years, I have decided rather to throw the idea open at these meetings and to call for cooperation on it. I am still hoping, however, to do some experimentation in the near future. The fact that kite photography has proved practicable in Nigeria and elsewhere gives me confidence that these problems can be solved.
