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NOTES ON RECENT LITERATURE RELATING TO PHOTOGEOLOGY

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Black, R. F., and Barksdale, W. L., Oriented lakes of northern Alaska: *Jour. Geol.*, vol. 57, 1949, p. 105-118.

This paper directs attention to the unusual occurrence of elongate lakes having essentially parallel orientation throughout an area of some 25,000 square miles in the Arctic Coastal Plain of northern Alaska. These lakes were studied with the aid of Trimetrogon photography, and the paper is illustrated with 8 air photos and several additional ground photos. Characteristics of the lakes are described in some detail; their relations to permafrost are discussed; and hypotheses of origin are considered. It is of interest to note that the Alaskan lakes are similar in many respects to the "bays," or elongate depressions of the Carolina coastal plain in this country, well known through the studies of F. A. Melton, Douglas Johnson, and others.

Cabot, E. C., The Northern Alaskan Coastal Plain interpreted from aerial photographs: *Geographical Rev.*, vol. 37, 1947, p. 639-648.

Typical lake and stream features and polygonal frost patterns of the region are described and illustrated with 8 aerial photos.

De Blieux, Charles, Photogeology in Gulf Coast exploration: *Bull Amer. Assoc. Petrol. Geol.*, vol. 33, 1949, p. 1251-1259.

The area discussed in this paper lies in the deltaic plain of the Mississippi River, which is characterized by "a net work of complicated natural-levee systems which rise above the general land level and divide the area into numerous swamp lowlands." In this area, geologic structures have no representation in surface geology, and their topographic expression commonly is obscure on the ground. By applying geomorphic principles to the interpretation of air photos, however, it is found that departures from the normal characteristics of the natural levees, together with other types of drainage anomalies, provide clues to the location of dome structures, and thus supply the petroleum geologist with a new approach in the search for oil. The paper is illustrated with four full-page, annotated mosaics.

Fairbridge, R. W., and Teichert, Curt, The low isles of the Great Barrier Reef: a new analysis: *Geogr. Jour.* (London), vol. 111, 1948, p. 67-88.

The investigation reported in this paper was one of a series carried out under the auspices of the Royal Australian Air Force to aid in the photo interpretation of coral reefs. The area studied is located off the coast of northeastern Australia. Large-scale vertical photos were used in detail ground examination, and were supplemented by oblique photography and by direct observation from the air. A unique opportunity was provided for comparing features shown on 1945 photography with those on 1928 photography. The paper is illustrated with 6 air photos and one detailed map with cross sections. It contains much of interest for both the geologist and the photo-interpreter of terrain conditions.

Fisk, H. N., Geological investigation of the alluvial valley of the Lower Mississippi River: War Dept., Corps of Engineers, Mississippi River Comm. Vicksburg, Miss., 1944.

In this voluminous report, the photogeologist will be particularly interested in the numerous annotated air photos and accompanying explanations of typical surface forms and patterns of the alluvial plain. Past and present meander systems, braided drainage, distributary patterns, and natural levees, together with recent fault lines, are well illustrated and are discussed at length. For the photo interpreter concerned with alluvial lowlands, Fisk's report constitutes basic reference material.

Guppy, D. J., and Matheson, R. S., Wolf Creek meteorite crater, western Australia: *Jour. Geol.*, vol. 58, 1950, p. 30-36.

The characteristics of this newly-found meteorite crater are shown by one excellent vertical air photo supplemented by one panoramic ground photo and 2 cross-sections. The crater is 2,800 feet in diameter and has a maximum depth of 170 feet.

Krinitzsky, E. L., Origin of pimple mounds: *Amer. Jour. Sci.*, vol. 247, 1949, p. 706-714.

The mounds described in this paper range up to about 5 feet in height and 100 feet in diameter, with averages of about one half of these figures. In many areas of the Gulf Coast in Texas and Louisiana they occur closely spaced over wide areas; they are found also in several other states. Where well developed, they exhibit a striking dotted pattern on air photos, as shown on the several vertical photos which illustrate the paper, and probably have been noted by all photo interpreters working in the areas mentioned. Krinitzsky's paper is of interest both for its descriptions and excellent illustrations, and for its contribution to the controversial question as to the mode of origin of the mounds.

Smith, H. T. U., Giant glacial grooves in northwest Canada: *Amer. Jour. Sci.*, vol. 246, 1948, p. 503-514.

In the Mackenzie Valley area west of Great Bear Lake, one of the striking features of the landscape, as seen from the air, is the furrowing of many ridges and mountain slopes by glacial grooves of unusually large size. On the ground, the true nature of these grooves is hidden by the forest cover, and it was not until aerial photographs were available, and direct aerial observation was brought to bear, that the size and extent of the grooves could be appreciated and their significance interpreted. So studied, it was found that the grooves

are approximately straight and parallel, range up to about 100 feet in depth and upwards of one mile in length, occur closely spaced in zones related to geologic conditions, and together form a systematic regional pattern recording the advance of the last great ice sheet. The paper is illustrated with 11 vertical and oblique air photos, including 2 stereograms, and with 3 ground photos keyed into the air photos. Photo interpreters dealing with arctic terrain may find the information in the paper applicable to their particular problems.

Troll, Carl, Strukturböden, Solifluktion und Frostklimate der Erde: *Geol. Rundschau* (Stuttgart, Germany), Bd. 34, H. 7/8, 1944, p. 545-694.

This paper is of interest to photo interpreters for its air photos and discussions of certain features peculiar to frigid regions, particularly frost-crack nets and "Strangmoor," or striped bogs. Illustrations are from arctic Russia.

Wilson, J. Tuzo, Some aspects of geophysics in Canada with special reference to structural research in the Canadian Shield (part 2): *Trans. Amer. Geophys. Un.*, vol. 29, 1948, p. 691-726.

In contrast to the many papers pointing out the uses of air photos in detailed geologic mapping, this paper is concerned primarily with the application of photogeology to the rapid reconnaissance mapping of certain structural features only. The features in question are those represented by straight or gently curving scarps, valleys, or grooves, and the mapping proceeds simply by plotting the trends of these "linears," commonly without reference to the lithology of the associated rocks. Interpretation is based on the characteristics of the over-all pattern of the linear elements, rather than on their individual features. Excluding the linear features due wholly to glaciation, patterns related to each of the following are distinguished and discussed: (1) batholithic intrusion, (2) diabase dikes, (3) bedding, (4) gneissic foliation, and (5) faulting and jointing. The various patterns are illustrated with maps and air photos, and the patterns of particular areas in the Shield are discussed at some length. From these data, correlated with other geologic information, provisional interpretation of regional orogenic history is made.

It is pointed out that geologic conditions in the Canadian Shield are particularly favorable for the above type of study, and that, owing to the inaccessibility of much of the region and the difficulties of ground mapping, the need for a short-cut approach to essential types of structural data is particularly great. Although the adequacy of the data obtained for the type of interpretation essayed may be questioned by some, and can be fairly appraised only in the fullness of time, as the author freely grants, the paper does represent a pioneering endeavor in the application of photogeologic methods to fundamental problems of geologic science.

Zonneveld, J. I. S., Suriname en de Luchtkartering: Cent. Bur. Luchtkartering te Paramaribe, Pub. no. 1, 1949, p. 1-18.

—Surinaamse Luchtfoto'si: Ditto, Pub. no. 2, 1950, p. 1-8. (*Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap*, Deel 67, Afl. 2, Leiden)

These papers discuss the uses of aerial photography in Netherlands Guiana, South America. The first paper is illustrated with 8 air photos, the second with 6. Both papers are in Dutch, but captions to photos in the second are given also in English. Natural and cultural features, including sugar and coffee plantations, are well illustrated.