

GOAL COMPOSITION REVEALS OIL AND GAS

The possibility of striking oil and gas in any locality is indicated by the composition of the coal found in that region, according to studies of Illinois coals by G. F. Moulton of the Illinois Geological Survey. The ratios of the fixed carbon to the total combustible matter, as determined by analysis of the coal, affords the petroleum prospector a scientific index to the probable presence and the depth of oil and gas accumulations in underlying strata.

The report issued by the Survey shows that in areas of high carbon ratios the lowest stratum with possibilities of oil production is shallow and limited to the later Paleozoic rocks, while in areas of low carbon ratios the lowest stratum with such possibilities lies deeper and includes the older Paleozoic formations as well as these of later origin. The coals mined in Illinois were found to have a fixed carbon content varying from 49 - 65 % of the total combustible matter, while most of the oil production is from areas with carbon ratios lying between 54 and 57 per cent.

The explanation of this relationship between the composition of the coal and the presence of petroleum is found in the metamorphic changes brought about by heat and pressure to which the deposits are subjected. Geologists have recognized for some time that the degree to which rocks have been metamorphosed is a factor affecting the accumulation of economically important pools of gas and oil.

Metamorphism causes chemical and physical changes in the material from which the oil is derived and probably brings about the transformation. It enhances the circulation of fluids through the rock strata, thereby promoting the accumulation of deposits of economic importance. It alters the nature of the reservoir-rock, sometimes making it unsuitable for efficient retention of oil. Finally, it changes the character of the oil after its formation and, if carried to the extreme scatters any accumulation and destroys its value.

The same conditions of heat and pressure which thus affect the accumulation of oil change the composition of the coal, and these changes, as expressed by the carbon ratio, were found to be closely related to the oil possibilities. The study of the petroleum-producing regions of Illinois shows that in areas where the carbon ratios are above 60 per cent., the oil and gas possibilities are poor, while the lower the ratios the greater the probability of large accumulations.

COLOR MOVIES COMING IN VOGUE

Black and white motionpictures, now so popular, may soon be superseded almost completely by films taken and produced throughout in natural colors, judging by the activity of several companies.

Slapstick comedies will doubtless continue to appear in drab monochrome for some time, but in feature photography the large conservative Hollywood producers are now capitulating to the demand for color. At least a part of several major screen dramas now in preparation will revel in chromatic glory.

With the aid of super-illumination much in excess of the usual studio requirement, the photographer now takes two films of the same scene simultaneously through a single lens. One of these responds only to green light, and is finished as a green transparency. The second, recording only red, is finished in red. The two films, pasted back to back in exact register, are ready for the exhibitor. There is no photographic deposit of metallic silver as in the case of the ordinary black and white picture.

Artists, accustomed to a whole galaxy of pigments, can hardly believe that red and green alone can yield such accuracy and variety in shade. Sky tints; anything you wish in leaf, tree-trunk or earth shades; every possible hair and flesh tint, and even the regal effects of warm black plush and golden satin are faithfully and beautifully recorded. Pure lemon yellow, cobalt blue and the pure purple shades are not available, however - at least not until some three-color process is perfected. Unfortunately there are only two sides of a film, so that the third color doesn't know where to go. These shortcomings, nevertheless, are not noticed by the cinema patron, who spends most of his time appraising the flesh tints anyway!

The color of film costs several times the figure for black and white. However, when even the cheapest comedies cost five dollars per second of theater exhibition time, or in other words five dollars per foot of film, the added expense does not rate high when compared to other costs. Unlike the hand-tinted films of previous years, the new films may be duplicated in positive indefinitely without continued repetition of the great initial cost.

ARABIA MAY BE MOTHER OF FIRST CIVILIZATION

Arab faces in the tented town of Jabrin, an oasis in southern Arabia, which have a fleeting resemblance to features on prehistoric sculpture in Mesopotamia, may be a clue to the birthplace of civilization.

O.G.S. Crawford of the British Ordnance Survey, in the forthcoming issue of the Geographical Review, pieces the story of civilization on earth which is told by fragments of art and industry of the ancient races of Mesopotamia, India, and Egypt.

Remains of the oldest civilized race known, the Sumerians, were found in Mesopotamia a year ago. A contemporary inscription of a king who had been thought to be only mythical, and a masterpiece of art, consisting of a carved frieze of cattle being milked, were among the discoveries. The inscription is now the earliest dated historical document in the world, and is believed to have been made about 3500 years before Christ.

But on the sites where these ancient remains were found, are traces of a still older race which left nothing behind it but painted pottery and arrowheads.

"This race of neolithic people later disappeared," Mr. Crawford explains, "and they did not plant the seeds of an enduring civilization. It seems certain they came to the well watered plains of the Tigris and Euphrates from the north,