most important discovery made in the lower Yukon country. Hematite, scheelite, zinc-blende, copper-pyrites, stribuite, are some of the minerals associated with the gold in this region. Quartz mining promises well in some localities.

NICOLA COAL BASIN.

Dr. R. W. Ells then follows with his report of geological investigations in the southern interior of British Columbia, more particularly in what are new termed "the Nicola and Quilchena coal basins."

Coal had been expected in this region by Dr. Dawson, as stated in his reports of 1877-78 and 1804, respectively, and Dr. Ells has found that the possibly productive coal areas of the district could be arranged into four groups, viz.: (1) that of the Lower Nicola or Ten Mile Creek basin, about three miles below Coutlee; (2) that of the Coal Gully, containing several seams, one of which has been opened up and mined locally for some years; (3) the Coldwater seam, about a mile and a half to the east, where one seam is exposed in two outcrops on the bank of the stream, at an interval between the two exposures of nearly a fourth of a mile (these two are sometimes known as the Garesche Green area), and (4) the Quilchena Basin, which is entirely separated from the others and distant about ten miles to the east.

The length of the main coal basin of the Nicola-Coldwater area, from the foot of Nicola Lake to the south limit on the Coldwater, in a southwest direction, is about ten miles, and the greatest breadth is about three miles. The best natural section of the coal-bearing strata is seen in what is called Coal Gully, a small stream and a ravine situated about one mile and a half south of the Coldwater seam. Dr. Ells refers to two bore holes put down to test the localities, one near Coldwater and the other about two miles east on the bank of the Nicola One seam, three feet eight inches, was River. struck in the former, followed downward by two smaller seams, in all two inches thick. In the Nicola boring the seam was struck at 137 1-2 feet.

Four coal seams are displayed on Coal Gully. It was from this locality that Dr. Dawson, in 1877, obtained the section which gave alternating bands of sandstone with coal seams, the latter measuring respectively 15 ft. 4 in., 5 ft. 4 in., 3 ft. and 2 ft. 5 in. A section given by Dr. Ells from the tunnel run along the coal for 85 ft. gave: coal seam, 5 feet; shale parting, 1 ft. 6 in., and coal again, 13 ft. --in all 18 'eet. of coal and a foot and a half of shale parting Dips of strata accompanying coal seams and faults were noted in the field and coal is said to appear to be of good quality, yielding large blocks, and has been mined for years for local consumption. Coal-seam No. 2 holds coal 5 ft. 3 in., shale 4 ft., and coal 4 ft.

Analyses of these coals carried on in the geologi-

cal survey laboratory has shown the presence of fixed carbon in four samples to vary from 47 per cent. to 55 per cent., an average of 52 per cent. The Ten Mile Basin is then described and also boring operations in the Nicola-Coldwater Basin.

The Quilchena Coal Basin is in large part owned by the Diamond Vale Coal and Iron Mines, Ltd. The basin extends southward along the creek from Quilchena for about eight miles, with a maximum breadth of two and a half miles. The geological structure of the Nicola-Coldwater Basin also obtzins in the Quilchena Basin. One scam on this property, about six feet in thickness, is recorded by Dr. Ells, whilst on the west side of Quilchena Creek a broken seam of coal with a thickness of about three feet is reported. The Tunnel or Jackson seam, about six feet in thickness, is described and elevation given with notes on the occurrence of other coal seams with various kinds of strata be-The Palmer or Camp seam, "as exposed tween. in the Gully, there is here a thickness of about fifteen feet of coal." For surface showings, Dr. Ells describes the coal as of "good quality." Six companies are now owning mining areas in the Nicola Basin: The Nicola Coal Co., Ltd., The Coutlee Coal and Iron Co., the Nicola Coal and Iron Co., The Nicola, Kamloops and Limitkameen Coal and Railway Co. The C.P.R., (owning bases chiefly east of the Coldwater River), and the Diamond Vale Coal and Iron Mines, Ltd. Tables of bore-holes and materials struck there accompany the report.

Mr. R. A. A. Johnston gives notes on the different copper claims on which development work has commenced. On Big Sioux claim a shaft has been sunk 28 feet and a quantity of low grade ore has been raised. Aberdeen Camp and Iron Mountain areas are also described by Mr. Johnston.

LARDEAU MINING DISTRICT.

Professor R. W. Brock, of Queen's University, reports on his investigations in the Lardeau district, preliminary to which he made an examination of the Selkirk series of rock from Glacier to Revelstoke, along the Illecillewaet River. The character of the country along the Duncan, Lardeau and Kootenay valleys is described, including the geology of the glacier or ice-clad region, so famous for Alpine tourists and sight-seers. The geology of the solui rocks having been given, Prof. Brock deals with the mining geology and mining, giving details of the structure of the rocks and mode of occurrence of the minerals on the various claims examined within this area.

The ore of the "American" claim is described aquartz, calcite, hornblende and spattue iron, carrying galena, blende and gray copper. The "Wagner" claim, at an altitude of 8,000 feet, "on the Swede group at Poplar Creek, a considerable amount of surface work has been done, which has thrown