# CONTENTS

Foreword, by P. S. Smith .................................................. 1
Progress of surveys in the Anthracite Ridge district, by R. W. Richards and G. A. Waring ................................................. 5
Lode deposits of the Fairbanks district, by J. M. Hill .................. 29
The Willow Creek gold lode district, by J. C. Ray ...................... 185
The Mount Eielson district, by J. C. Reed ............................... 231
Mineral deposits near the West Fork of the Chulitna River, by C. P. Ross .......................... 289
Lode deposits of Eureka and vicinity, Kantishna district, by F. G. Wells ................................................................. 335
The Girdwood district, by C. F. Park, Jr .................................. 381
The Valdez Creek mining district, by C. P. Ross ......................... 425
The Moose Pass-Hope district, Kenai Peninsula, by Ralph Tuck .... 469

# ILLUSTRATIONS

## PLATE 1

<table>
<thead>
<tr>
<th>Geologic map of Anthracite Ridge district</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geologic sections of Anthracite Ridge district</td>
<td>14</td>
</tr>
<tr>
<td>Map of the Fairbanks district, Alaska, showing geology, claims, ditches, and cultural features</td>
<td>In pocket</td>
</tr>
<tr>
<td>Claim map of Cleary Hill mine</td>
<td>98</td>
</tr>
<tr>
<td>Plan and cross section of main workings, Cleary Hill mine</td>
<td>98</td>
</tr>
<tr>
<td>Claim map of properties on Fairbanks-Wolf Creek divide</td>
<td>106</td>
</tr>
<tr>
<td>Plan and cross section, Hi-Yu mine</td>
<td>106</td>
</tr>
<tr>
<td>Plan and cross section, Ready Bullion mine</td>
<td>130</td>
</tr>
<tr>
<td>Claim map of Ryan lode, showing location of workings, roads, and places sampled in 1931</td>
<td>130</td>
</tr>
<tr>
<td>Plan and cross section, Mohawk mine</td>
<td>146</td>
</tr>
<tr>
<td>Geologic map of Willow Creek district</td>
<td>172</td>
</tr>
<tr>
<td>A, Chalcopyrite-molybdenite stringer in normal quartz diorite; B, Rhombic blocks produced by joining in quartz diorite; C, Lucky Shot mine and camp and War Baby mine</td>
<td>204</td>
</tr>
<tr>
<td>Underground workings at Lucky Shot and War Baby mines</td>
<td>204</td>
</tr>
<tr>
<td>Cross sections of Lucy Shot mine</td>
<td>204</td>
</tr>
<tr>
<td>Workings on Skyscraper vein, Martin mine</td>
<td>220</td>
</tr>
<tr>
<td>Independence and Gold Cord mines</td>
<td>220</td>
</tr>
<tr>
<td>Map of workings of Independence mine</td>
<td>220</td>
</tr>
<tr>
<td>Map of Gold Cord mine</td>
<td>220</td>
</tr>
<tr>
<td>Map and section of Mabel mine</td>
<td>220</td>
</tr>
<tr>
<td>Map of workings of Fern mine</td>
<td>220</td>
</tr>
<tr>
<td>Topographic map of the Mount Eielson district</td>
<td>In pocket</td>
</tr>
<tr>
<td>Geologic map of the Mount Eielson district</td>
<td>In pocket</td>
</tr>
<tr>
<td>Structure sections across the Mount Eielson district</td>
<td>In pocket</td>
</tr>
<tr>
<td>Geologic map of part of the Mount Eielson district</td>
<td>In pocket</td>
</tr>
<tr>
<td>Geologic sketch map of the area near the West Fork of the Chulitna River, with structure sections</td>
<td>296</td>
</tr>
</tbody>
</table>
PLATE 26. Sketch map of the Ready Cash prospect, Ohio Creek
Page 320
27. Sketch map of the Golden Zone and Mayflower prospects
Page 320
28. Geologic map of Eureka and vicinity, Kantishna district... In pocket
29. Sketch map of lode claims in the vicinity of Friday and Eureka Creeks
Page 358
30. Assay map of Red Top tunnel
Page 358
31. Contour sketch map of Little Annie claim, showing tunnel
Page 366
32. Assay map of Little Annie tunnel
Page 366
33. Geologic map and sections of Girdwood district, Alaska... In pocket
34. Geologic sketch map of the Valdez Creek mining district and vicinity
Page 448
35. Placer claim map of the Valdez Creek mining district
Page 490
36. Geologic and topographic map of the Moose Pass-Hope district showing location of mines and prospects
Page 490

FIGURE 1. Index map showing areas investigated in Alaska Railroad belt, 1931
Page 3
2. Gold and silver produced in the Fairbanks district, 1903-31
Page 47
3. Directions and dips of veins and faults in the Pedro Dome area
Page 65
4. Directions and dips of veins and faults in the Ester Dome area
Page 65
5. Structural relations of vein quartz in Fairbanks district
Page 67
6. Metallization of veins with sulphide and free gold, Fairbanks district
Page 68
7. Camera lucida drawings of polished sections of bonanza ore, Fairbanks district
Page 69
8. Camera lucida drawings of polished sections of bonanza ore from Bank stope, Cleary Hill mine
Page 69
9. Map of Dome Creek drainage basin, showing location of mines and prospects
Page 77
10. Plan of surface workings on vein, Soo mine
Page 79
11. Map of Cleary Creek drainage basin, showing location of mines and prospects
Page 85
12. Plan of 100-foot and 160-foot levels, Newsboy mine
Page 87
13. Plan and cross section, Wyoming mine
Page 97
14. Map of Fairbanks Creek drainage basin, showing location of mines and prospects
Page 103
15. Plan of 60-foot level, Henry Ford no. 3 shaft, McCarty property
Page 105
16. Claim map, Hi-Yu mine
Page 109
17. Map of upper Goldstream Creek Valley, including Pedro, Twin, and Granite Creeks and Skoogy Gulch, showing location of mines and prospects
Page 113
18. Map of Ester Dome area, showing location of mines and prospects
Page 121
19. Plan of Little Eva adit
Page 130
20. Plan of 40-foot level, Eva no. 2 shaft, Stay property
Page 131
21. Plan and longitudinal section, Blue Bird shaft
Page 134
22. Cross section and plan of levels, Billy Sunday mine
Page 141
23. Plan and section of workings, Grant mine
Page 151
24. Sketch map showing tungsten lode claims in the Fairbanks district
Page 158
25. Schlieren in rock near upper adit of War Baby mine on Craigie Creek
Page 178
ILLUSTRATIONS

Page

26. Contact of dacite dike rock with quartz diorite country rock in Lucky Shot mine. .................................................. 182

27. Mineralized pegmatite dike on Holland property, on eastern valley wall of upper Patches Creek ........................................ 184

28. Section of vein in Lucky Shot mine, 350-foot level .................. 196

29. Section of vein in Lucky Shot mine, 500-foot level .................. 197

30. Section of vein in Lucky Shot mine, raise 553, 75 feet above 500-foot level .............................................................. 198

31. Flow sheet of Lucky Shot mine ........................................... 207

32. Sections of Gold Cord mine ................................................ 219

33. Section of Fern mine, showing vein structure and assay values. 255

34. Mean monthly temperature and precipitation at McKinley Park, Wonder Lake, and Broad Pass ........................................ 241

35. Development of normal fault south of Mount Eielson ................ 264

36. Explanation of granodiorite mass in forks of Glacier and Crystal Creeks as part of the Mount Eielson mass cut off by faulting .............................................................. 265

37. Generalized sketch map showing location of claims on the northern slope of Mount Eielson ........................................... 277

38. Diagrammatic view of the north flank of the valley of Cope- land Creek near the ice-filled gorge ....................................... 306

39. Diagrammatic sketch of faulting along upper Blind Creek ......... 307

40. Sketch map of the lower Ready Cash tunnel ............................ 319

41. Sketch map of the Copper King prospect ................................ 320

42. Tunnel on the Golden Zone prospect ..................................... 322

43. Sketch map of the Riverside workings ................................... 326

44. Sketch map of the Eagle prospect ......................................... 329

45. Geologic sketch map and section of main tunnel of Red Top claim .................................................................................. 362

46. Goat Mountain thrust fault .................................................. 392

47. Normal fault caused by compressive stresses ......................... 392

48. Section exposed in placer workings of lower Crow Creek .......... 399

49. Cross section of a part of lower Crow Creek Valley .................. 399

50. Sketch map of claims of Holmgren-Erickson mine .................... 400

51. Section on northeast side of the “big cut”, lower Crow Creek. 501

52. Sketch map of the upper workings, Bruno Agostino mine....... 415

53. Probable location of buried channels near Denali with refer- ence to present drainage .................................................. 447

54. Contour map of the Tammany Channel .................................. 450

55. Contour map of hydraulic cut on the Folk claim ....................... 452

56. Sketch map of the lodes on the Timberline prospects ............... 461

57. Plan of underground workings and position of the vein at Hirshey mine ............................................................... 502

58. Plan of underground workings of the Oracle mine, showing position of the vein .................................................. 509

59. Longitudinal section of the Oracle vein, showing limits of the ore shoot ............................................................... 509

60. Sketch map of the mineralized area between Slate and Sum- mit Creeks ............................................................... 511

61. Geologic map of mineralized dike in lower tunnel of the Gilpatrick property ............................................................... 513