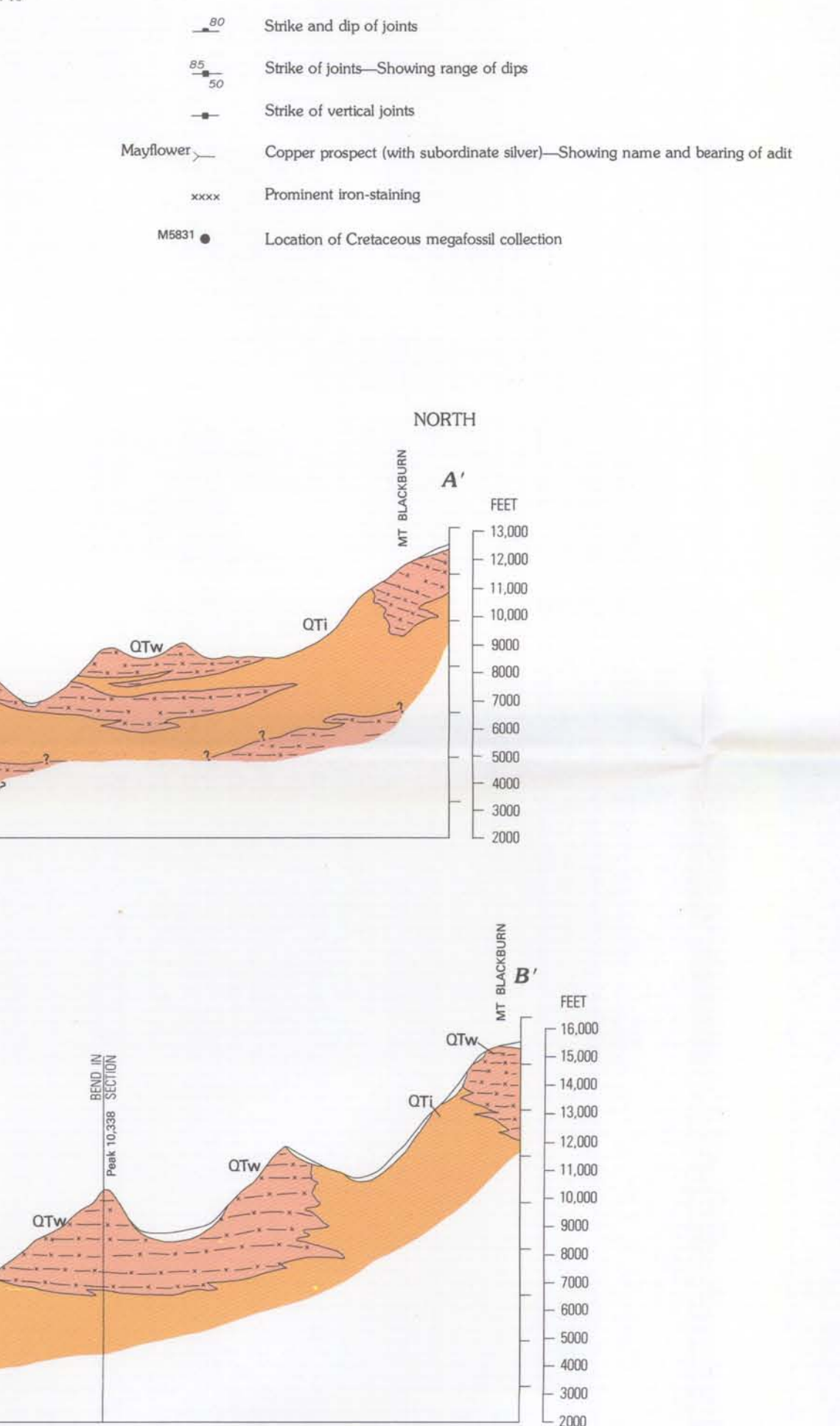
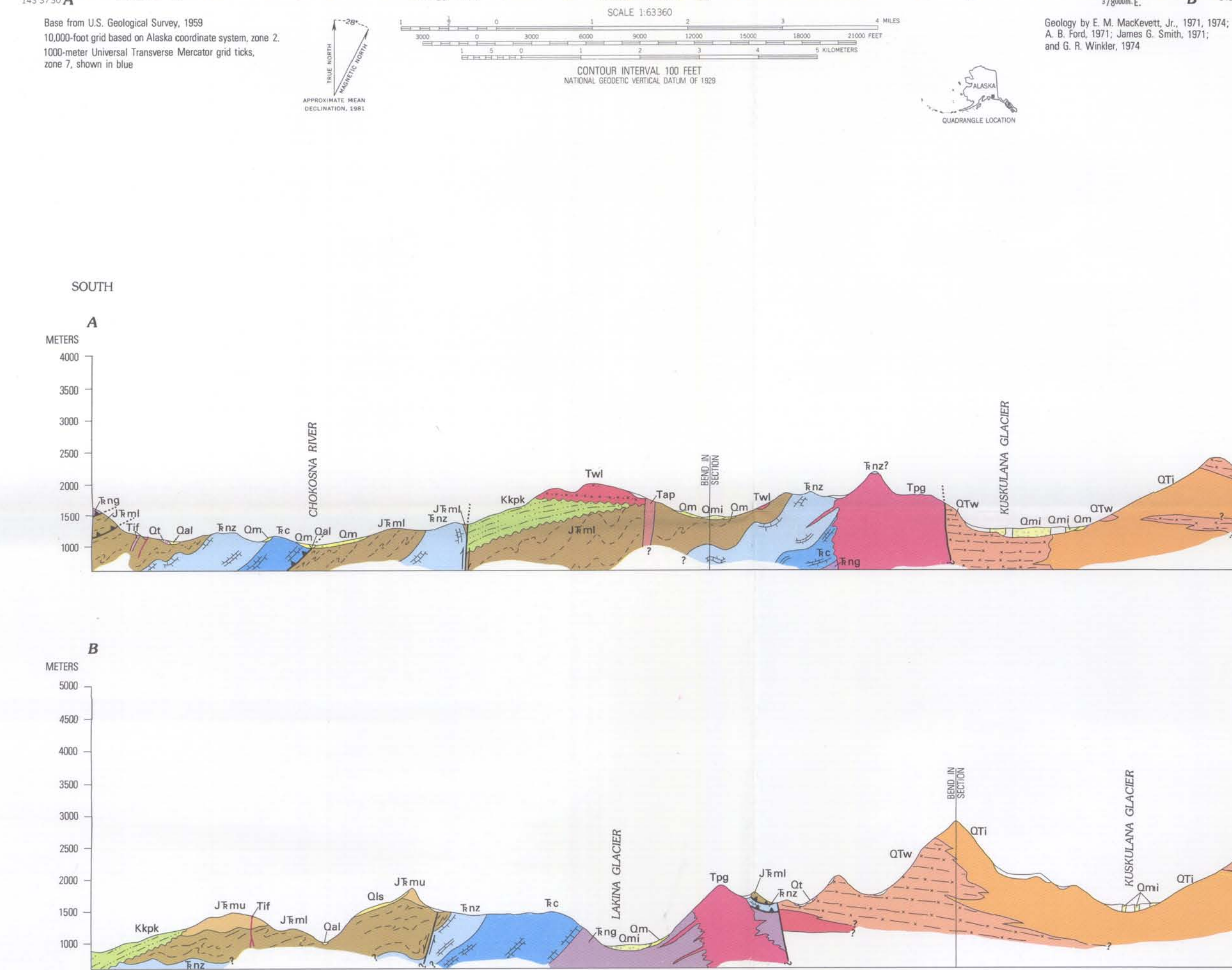


**CORRELATION OF MAP UNITS**  
**SURFICIAL DEPOSITS**  
**QUATERNARY**  
Oal, Ols, Omi, Omh  
**QUATERNARY AND TERTIARY**  
Qtw, Qtl, Qtr, Qts, Qtt, Qtu, Qtv, Qtw, Qtl, Qtr, Qts, Qtt, Qtu, Qtv  
**TERTIARY**  
Twi, Ttl, Ttr, Tts, Ttt, Ttu, Ttv  
**CRETACEOUS**  
Cksc, Kksc, Kksp, Kksc, Kksp, Kksc, Kksp, Kksc, Kksp  
**JURASSIC**  
Jm, Jtl, Jtr, Jts, Jtt, Jtu, Jtv  
**JURASSIC AND TRIASSIC**  
Jm, Jtl, Jtr, Jts, Jtt, Jtu, Jtv  
**TRIASSIC**  
Trc, Trs, Trt, Tru, Trv  
**Upper and/or Middle Triassic**  
Tm, Ttl, Ttr, Tts, Ttt, Ttu, Ttv

**DESCRIPTION OF MAP UNITS**  
**SURFICIAL DEPOSITS**  
**QUATERNARY**  
Oal—Alluvium—Recent alluvium and alluvium are widely distributed along broad, flood plain, and terraces of the Laina River and former distributaries. Older alluvium and outwash above the present flood plain support a vegetation cover. Several short steep tributaries of the Laina have formed alluvial fans of the shrubby gray pine and spruce that they discharge into the main valley. A broad, level alluvial terrace is in the west-central part of the quadrangle along the lower reaches of an unnamed tributary to the Kuskulana Glacier. Elsewhere in the quadrangle a thin veneer of alluvium or silt covers the middle reaches of the low streams and along the Chukcheena River. The alluvium and outwash consist of unsorted detrital debris, chiefly poorly sorted gravel and sand. Maximum thickness of alluvium are not known but probably do not exceed 60 m.  
Ols—Landslide deposits—Landslide occur along steep sideslopes of a few tributaries of the Laina River and Kuskulana Glacier. They consist of jumbled masses of rock and regolith and are characterized by hummocky surfaces and broad size ranges of their constituents. Some blocks are tens of meters in maximum dimension. Thicknesses of the landslide are not known but probably do not exceed 20 m.  
Omi—Rock glaciers—Rock glaciers are well developed throughout the quadrangle and consist of lobes, spallate, or annular trains of disintegrated angular slabs and blocks of local derivation. They are partly covered by ice and often display surface faceting that is indicative of mass movement down slope. The rock glacier is 3.5, R. 101E, sec. 10 is sufficiently active to have dammed a tributary of the Kuskulana Glacier. It is breached by a waterfall and separates adjacent plains whose elevations differ by 20 m. Rock glaciers characteristically merge up slope with talus, moraine, or alpine glacial maximum thicknesses are not known but may exceed 20 m.  
Omh—Moraine ONCE—Supraglacial moraine completely mantle the lower reaches of the Kuskulana and Laina Glaciers, some of their tributaries, and parts of alpine glaciers throughout the quadrangle. They are physically and genetically distinct from the moraine below that are underlain by ice. They consist dominantly of unconsolidated coarse rock debris, in a few places entrained in gravelly mud.  
Otr—Moraine—Lateral, end, and ground moraine of former more advanced stages of glaciation are widespread. Many are proximal to modern glaciers. The broad moraine between the Laina and Chukcheena River valleys, however, is a remnant of regional glaciation; it may include minor glacial lacustrine or glaciolacustrine deposits. The moraine consists mainly of sorted boulders, cobbles, and gravel of diverse lithologies. The older moraines are weathered and supporting vegetation. Maximum thicknesses measured on outcrop are 10 m or more.  
Otu—High-level moraine—A discontinuous mantle of weathered glacial erratics lies above harmony to smooth gravel-covered or bedrock upland with a well-developed soil profile and the south-central part of the quadrangle. It is probably the remnant of a once widespread deposit now largely modified by periglacial processes. Maximum thickness is 2-4 m.

**INTRUSIVE ROCKS**  
**WRENCELL LAVA**  
The Wrenzell Lava was named by MacKenzie (1906, p. 57-60) to designate the voluminous effusive rocks from the summit volcanoes of the Wrangell Mountains. The Wrenzell Lava is a part of a calc-alkaline volcanic province that extends through much of northern southern Alaska and nearby parts of the Yukon Territory in Canada. No direct evidence for the age of the Wrenzell Lava has been gained in the McCarthy C-7 quadrangle, but regionally it is synchronous from Miocene to Holocene.  
The Wrenzell Lava has been divided here informally into two parts: an upper member, by far the larger proportion of the formation, and a basal lower member that is exposed near Castle Peak and is isolated outcrops in the west-central part of the map.  
Upper member—Substantial flows of the upper member of the Wrenzell Lava are widespread in the central part of the quadrangle. The upper member consists of a dark gray to black, thin-bedded, stratified, massive, and locally columnar flow that is 10-15 m thick. The upper member is composed of dark gray to black, thin-bedded, stratified, massive, and locally columnar flow that is 10-15 m thick. The upper member is composed of dark gray to black, thin-bedded, stratified, massive, and locally columnar flow that is 10-15 m thick.  
Lower member—The lower member of the Wrenzell Lava crops out in two places in the quadrangle.  
(1) On the eastern and western sides of Castle Peak, where it overlies along a very irregular contact with well-bedded, bold outcrops of the upper member and its base is exposed; and  
(2) In the west-central part of the quadrangle where it overlies Upper Triassic and Lower Cretaceous rocks with slight to marked angular conformity and is top is not exposed.  
The substrate had considerable relief, as the small outcrop in T. 3 S., R. 10 E., sec. 22 and 23 demonstrates. The upper contact, where exposed, is discordant, but in many places it may represent only a brief hiatus between upper and lower members. The lower member consists of dark gray to black, thin-bedded, stratified, massive, and locally columnar flow that is 10-15 m thick.



**REMARKS**  
The Kuskulana River is a distributary of the Laina River and flows from the southwest to the northeast. The Laina River flows from the southwest to the northeast. The Chukcheena River flows from the southwest to the northeast. The Kuskulana Glacier is a large glacier that flows from the southwest to the northeast. The Laina Glacier is a smaller glacier that flows from the southwest to the northeast. The Chukcheena Glacier is a small glacier that flows from the southwest to the northeast.

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1981

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