

A PROSPECTOR'S GUIDE TO OPAL IN THE YOWAH-EROMANGA AREA

By J. H. BROOKS, B.Sc., Supervising Geologist (Economic Geology),
Geological Survey of Queensland.

An inspection of the Little Wonder area, west of Eromanga, and the Yowah area, west of Cunnamulla, was made from 13th to 15th July, 1967, in company with Mr. W. J. Page, Acting Mining Warden, Cunnamulla, and Mr. A. J. Saunders, Inspector of Mines.

The main opal mining activity in South Western Queensland is currently centred on the two areas visited, although information from various miners indicates that there has been some activity in recent years in the Karoit, Black Gate and Duck Creek areas in the Cunnamulla district, in the Kyabra area, north-west of Eromanga, and in the Canaway Downs area, north of Quilpie. Two claims have also been taken up in the Noella station area, 55 miles north-north-west of Charleville. A general revival of interest in opal mining has taken place over the past two or three years. Production of opal is not known but is believed to be relatively small. It is being sold mainly to Sydney buyers who make periodic visits to the fields.

YOWAH AREA

Six mineral claims were current, two were under application and three had been recently abandoned at the time of the inspection (see plan of workings). The improved access to the area, the presence of an artesian bore less than one mile from the workings and the general increase in interest in gemstones has resulted in considerable numbers of amateur enthusiasts and tourists being attracted to the field. The activity of these people is largely confined to fossicking among the dumps and in the shallow abandoned workings.

I am indebted to Mr. J. Jennison and Mr. E. Pigram for much useful information on the general layout of the workings and the occurrence of opal. Mr. Jennison has established an opal cutting and polishing business on the field.

Location and Access (see map)

The Yowah field is situated 66 miles a little north of west from Cunnamulla (lat. 27°58½' S., long. 144°37½' E.), adjacent to the boundary fence between Moolya and Bingara stations. The present access via Moolya station replaces the old, more direct, access via Bundooma homestead and Sheep Station Creek. Details of access are as follows: Cunnamulla to Eulo, 42 miles (sealed surface), Eulo to Toompine turn-off, 11 miles (formed earth), Toompine turn-off to Alroy homestead, 27 miles (formed earth), Alroy to turn-off from Toompine road, 3 miles (formed earth), turn-off from Toompine road to Moolya turn-off 4½ miles (formed earth), Moolya turn-off to Moolya homestead 4½ miles (vehicle track) and Moolya to Yowah field 6 miles (vehicle track, rough in places). The total distance from Cunnamulla is 98 miles.

Occurrence of Opal

The main area of workings extends over a length of approximately one mile and a width of a quarter of a mile.

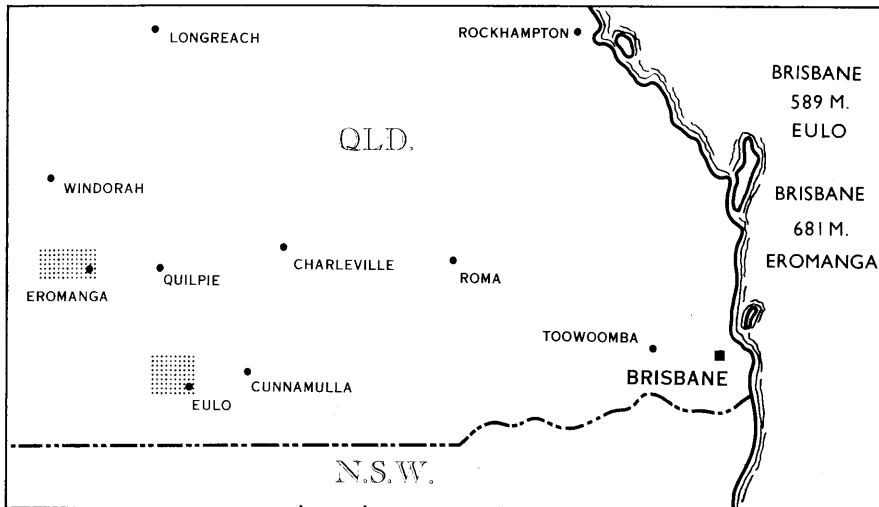
The original find is said to have been in the vicinity of the existing Water claim at Whisky Flat. Production has come from this area and particularly from its extension to the west known as "Evans lead". Opal has also been won from the old Southern Cross and Brandy Gully areas. White, grey, blue and colourless "potch" is of common occurrence and black potch has also been found. Precious opal mostly occurs in the form of matrix opal. Wood opal is not uncommon but the cell structure is usually almost obliterated. Combinations of potch and precious opal with unusual patterns (picture stones) are found and are in demand for making up into novelty settings.

Yowah opal is obtained from a series of ferruginous horizons containing numerous small ironstone concretions known as "nuts". These horizons or "bands" normally range in thickness from 3 to 12 inches, but bulges sometimes occur, and a band may taper off until it is marked only by a film of ferruginous material. The bands usually occur at the interface between clay sandstone (above) and claystone (below). Nodules or pellets of clay are often present in the sandstone and thin veins of gypsum are also commonly found above the band. In the Whisky Flat area gypsum is reported to be quite abundant and its presence has been claimed to be a favourable indicator for opal. However, only minor amounts occur in the productive Brandy Gully area.

Information available on the numerous workings is too fragmentary to determine what continuity exists between the nut bands in the various sections of the field. However, from information obtained during previous inspections (Simmonds, 1960 and 1961) and the recent inspection, it appears that the most persistent band is at a depth of 35 to 40 feet with a less persistent, but apparent more productive band at a depth of 20 to 26 feet. As the workings are on very gently sloping ground, the differences in shaft collar elevations are comparatively small. Locally, bands may be developed closely separated above or below the main bands. Another band is reported in some workings at a depth of only a few feet, while one deeper shaft intersected two bands below the main band at 40 feet. No lateral development is known to have been carried out on these deeper bands and they may be quite restricted in extent. The deepest shaft on the field is believed to be one of 56 feet.

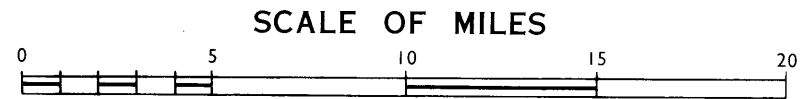
Nil Desperandum (M.C. No. 30)

Shafts have recently been sunk on several of the Yowah claims but the only underground inspection made was at the Nil Desperandum, where Mr. E. Pigram was making an orderly approach to the exploration of a nut band. A sketch plan of the workings was kindly supplied by Mr. Pigram. The main shaft was sunk 40 feet and bands were exposed at the 20 feet and 40 feet levels. The band at the 40 feet level was not driven on, attention being concentrated on the 20 feet level where 250 feet of driving has been carried out over an area approximately 68 feet long and 56 feet wide. An air shaft, 40 feet west of the main shaft, provides ventilation.

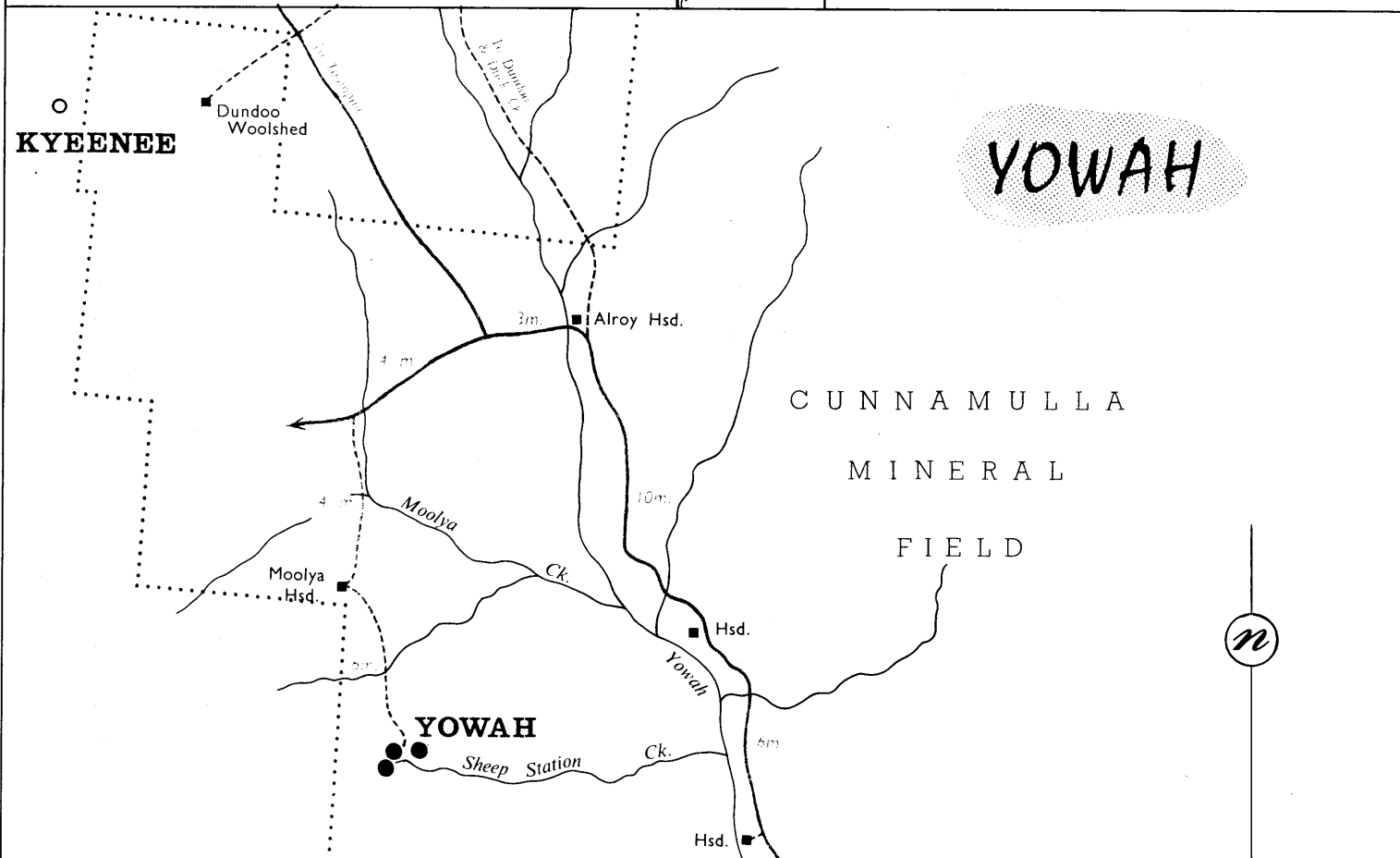


DEPARTMENT OF MINES, QUEENSLAND
 LOCALITY MAP
**YOWAH & EROMANGA
 OPAL WORKINGS**

To accompany a report by J.H. Brooks, B.Sc., Supervising Geologist, 24th. August, 1967.



Drawn at the Department of Mines, Brisbane, by J.W. Greig, September, 1967
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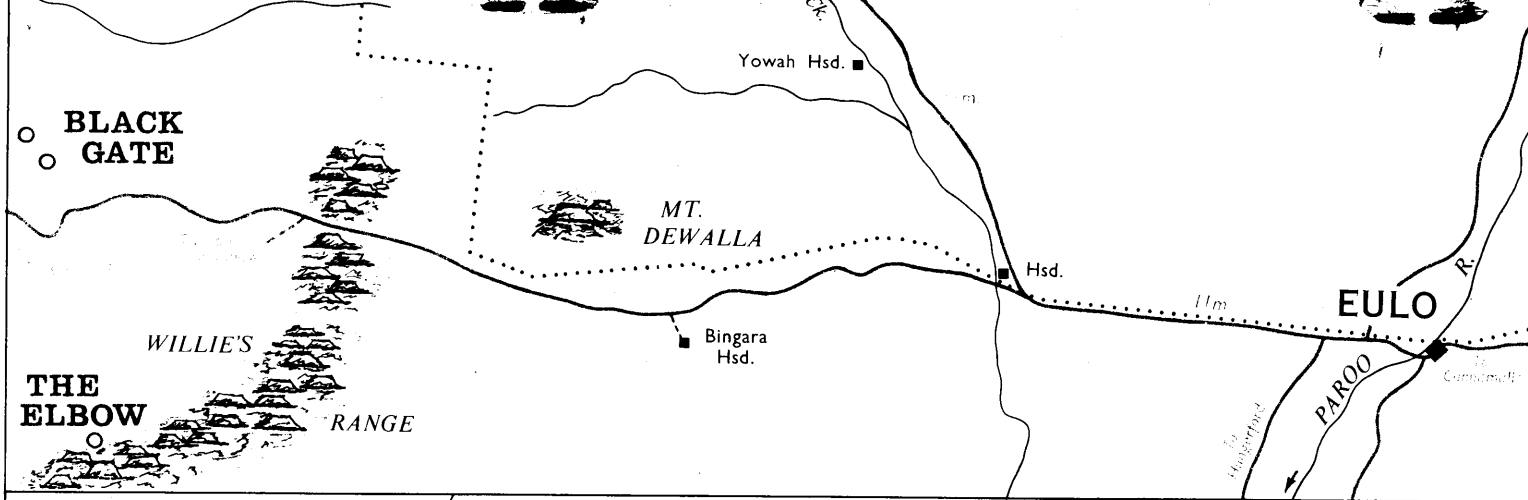


LEGEND

- Fence
- Formed road
- Vehicle track
- Opal workings described in report
- Other opal workings approx. posn.
- Hsd. Homestead
- Mileage between road turnoffs or homestead
- Mineral Field boundary

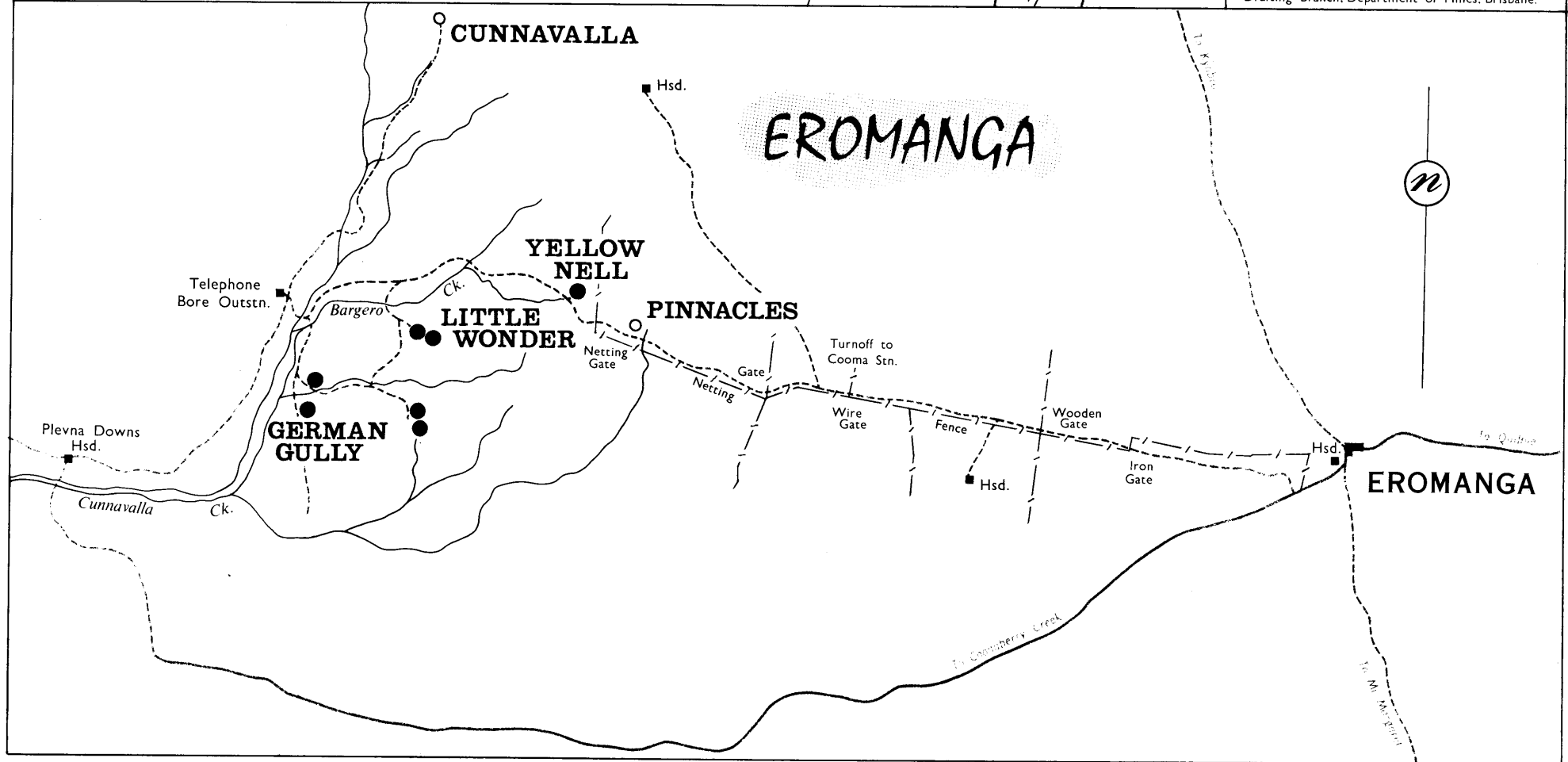
Average Annual Rainfall
 5 to 8"

See "Opal Bearing Localities of Western Queensland" Map



Minerists should not attempt to travel west of Cunnavalla, Quipie, Longreach, or Winton without adequate reserves of water, petrol, oil, and food. They should acquaint local police with proposed itinerary.

Copies of this map may be obtained from the Drafting Branch, Department of Mines, Brisbane.



The nut band persists over the area mined and usually ranges in thickness up to about 12 inches. The nuts are normally one to three inches across and ellipsoidal in shape. Undulations in the band appear to have had an important effect on the localisation of opaline material. In Mr. Pigram's experience the most prospective place for the occurrence of opal is at the bottom of depressions in the nut band (see sketch). This corresponds with experience at Coober Pedy in South Australia (Hiern, 1965). Nuts which may have opaline "kernels" sometimes betray the fact by the presence of films of opal on their lower surface. Most of the precious opal is obtained from the centres of nuts although some may occur between concretionary layers on their lower side. In nuts containing opal the concretionary ironstone is commonly siliceous and may consist of ferruginous jasper. Several fragments of ferruginous fossil wood were seen in association with the nut band. Ironstone concretions also occur in discontinuous horizons above and below the 20 feet level but these are rarely opaline. The ones exposed in the mine workings below the main band were up to 12 inches long and disc-shaped. The probability of finding marketable opal in a nut is something of the order of one in thousands but the indicators mentioned above enable some selection to be made.

Conclusions

A systematic approach to the lateral exploration of the nut bands with a view to locating favourable areas, as is being carried out on the Nil *Desperandum*, has much to commend it.

All the exploration in progress was in proximity to old workings and apparently not a great deal of effort has been directed towards the location of new areas. While the prospects of some return for the effort expended are much greater around the fringes of the areas which have been productive in the past, few major discoveries can be expected. Should the level of interest in opal mining increase, it may induce prospectors to go further afield and lead to the discovery of other deposits which very likely remain to be found.

Drilling on a widely spaced grid working out from known opal-bearing areas may have some application in locating bands and indicating prospective areas for shaft-sinking. The widespread occurrence of silcrete on residual surfaces in the opal-bearing areas, and the tough siliceous nature of the ferruginous bands in potentially productive areas, suggests the use of a "Gemco" drill with down-the-hole hammers. As two or more bands are usually present it would be important to penetrate the higher bands and reach the bottom of the prospective opal-bearing section (circa 50 feet).

A study of the structural geology of the area may be important in the search for new deposits. No geological maps of the area are available, but from air photo interpretation the Yowah field appears to be in a gentle synclinal structure and the Duck Creek field to the north is also situated in the trough of a broad syncline (Simmonds, 1962). However, paucity of outcrop would hinder any detailed study.

LITTLE WONDER AREA

Three claims were held (M.C. Nos. 9, 10 Charleville and No. 34 Cunnamulla), and one had been abandoned recently (M.C. No. 6 Charleville). In addition, one prospecting area was held and three mining parties were operating without the protection of a claim or prospecting area.

Location and Access (see map)

The Little Wonder area is situated 24 to 34 miles a little north of west from Eromanga (lat. 26°37' S., long. 142°46½' E.). Access from Quilpie is as follows: Twenty-three miles on the Windorah road (sealed surface), 43 miles from turn-off to Eromanga (formed earth), 2 miles from Eromanga on the Coonaberry Creek road (formed earth) to Telephone Bore turn-off, 30 miles to Little Wonder mine turn-off (unformed earth) and 1½ miles to the mine (vehicle track). Total distance from Quilpie is almost 100 miles. Access is reasonably good but the area lacks a convenient water supply. Miners were utilising a water hole some 6 miles from the mine area. The deposits are in the MacGregor Range which is a meridional belt of mesas and buttes consisting of laterite developed on sandstones and shales, presumably of the Upper Cretaceous Winton Formation.

Little Wonder (M.C. No. 34, Cunnamulla)

This mine was described by Jackson (1902) as being one of the richest of the Queensland opal mines. The opal-bearing ferruginous band was located near the base of a lateritised sandstone hill and explored by a series of adits. It occurs between sandstone above and claystone below and appears to have a gently undulating surface. Exploratory workings extend over a distance of half a mile but the main adit workings are restricted to a length of about 350 feet. Two air shafts some 80 feet apart are 60 feet and 85 feet up a moderate hill slope from the adit portals. No attempt was made to enter the old workings although it was reported that miners had done so in recent years. From the numerous shafts sunk on the flat adjacent to the adit workings it is assumed that a second band was found at a lower horizon than that in the Little Wonder mine.

A considerable amount of bulldozing has been carried out towards the south-eastern end of the adit workings to gain access to mine pillars. The ferruginous band carrying some precious opal was exposed in the floor of the bulldozer cut at one point. Some good quality opal is reported to have been obtained from the Little Wonder workings in recent years. The claim holder (J. Hofflund) was awaiting the arrival of a heavy bulldozer to enable the work of exposing mine pillars to be extended.

Little Wonder Prospecting Area (J. Hofflund and F. Fazzari)

A bulldozer had been used to expose a ferruginous band at the base of a sandstone mesa. Ironstone concretions occur in the band, and also above and below it, but no precious opal is reported to have been found so far.

J. Svagy and G. Spalenka

These miners were working a new area 2½ miles south of the Little Wonder. A concretionary ironstone band at the contact of sandstone and claystone had been followed into the side of a hill for a distance of some 15 feet. The band approximated two feet in thickness and opal was present in some of the concretions, mainly in the form of blue patch. A little precious opal had been found but no good quality material.

G. Haugut

On a flat a few hundred yards from Messrs Svagy and Spalenka, Mr. Haugut was exploring an occurrence of pipe opal at a depth of approximately 8 feet. The pipe opal seen was of rather inferior quality and the amount of better quality material found was reported to have been small. Some brown matrix opal has also been found here.

German Gully

This area was previously held as M.C. No. 6 (Charleville) by A. J. Peshorn and J. Davis, and is now held as M.C. No. 9 (Charleville) by C. Vorborel and M.C. No. 10 (Charleville) by F. Fazzari. M.C. No. 10 was abandoned at the time of the inspection.

The workings are 4 miles south-west of the **Little Wonder** on the lower slopes of a mesa. An opencut had been excavated in the bottom of a gully and several shafts had been sunk on the adjacent slopes. Mr. Fazzari reported having sunk seven shafts to depths of up to 28 feet without finding any precious opal. Commonly three ferruginous bands were intersected. Mr. Vorborel stated that the opal was found mainly between concretionary layers in the lower part of ironstone boulders. Specimens of brown potch containing some associated precious opal were seen.

On the opposite side of the valley to M.C. Nos. 9 and 10 two Hungarian miners had sunk a series of shafts to explore a new area. A ferruginous band with boulders had been located but it contained very little opal.

Yellow Nell

No claim was held over this deposit which is situated 5 miles east-north-east of the **Little Wonder**. Workings extend along the side of a low ridge for several hundred feet. Small opencuts have been excavated to reach the band which has then been followed by tunnelling. However, the workings were in various stages of collapse. Concretionary ironstone boulders were in evidence but no opal was seen.

Pinnacles

These workings on the northern side of the access road, 2 miles south-east of the **Yellow Nell**, were not inspected but the results of recent bulldozing could be seen from the road. Reports indicate that the results of the bulldozing were negative.

Cunnavalla

This old mine, which was productive during early mining operations, is 10 miles north of the **Little Wonder**. Some exploratory work was reported to have been carried out in recent years but it had been abandoned and no inspection was made.

Conclusions

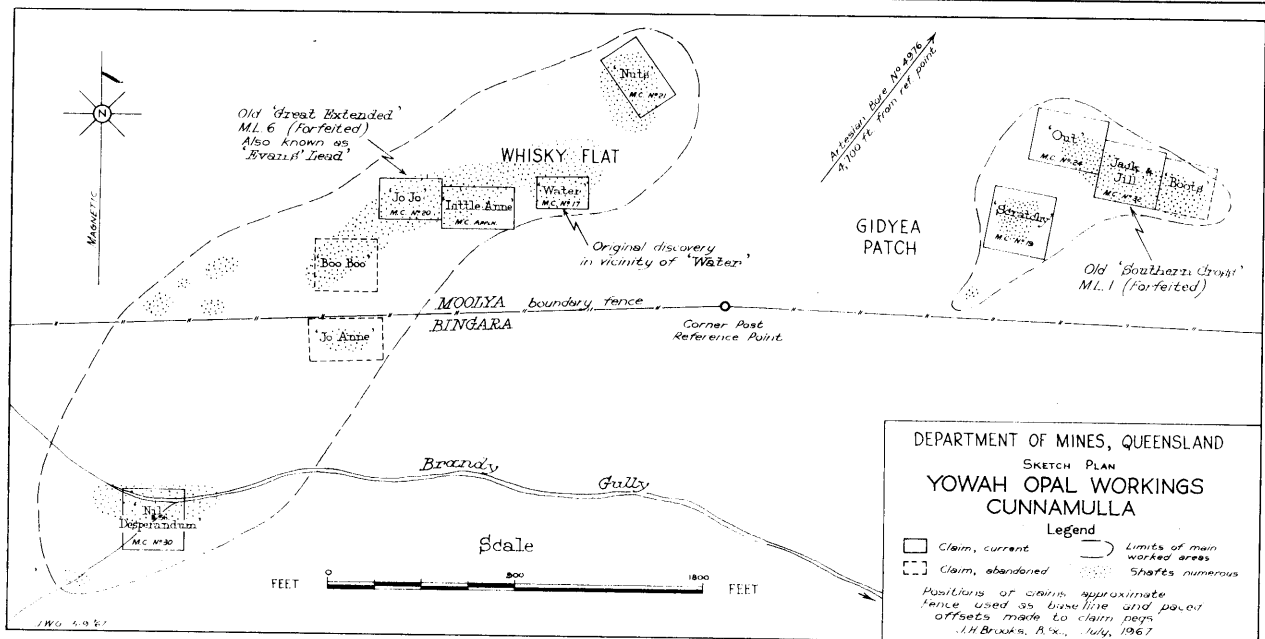
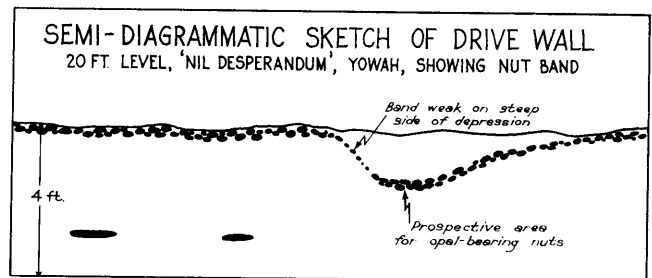
Although reports indicate that significant amounts of opal have been won from the **Little Wonder** area in the last few years, the impression was gained that the miners on the field at the time of the inspection were not meeting with a great deal of success. Apparently bulldozing has not resulted in the location of any new opal-bearing localities, but it seems to have some application at previously productive mines in enabling the recovery of opal from pillars and

also in exposing potentially opal-bearing bands at the base of mesas.

Ferruginous bands carrying potch are widely distributed and the location of precious opal was being carried out on a simple trial and error basis. Without the opportunity to study productive mines it is not possible to suggest factors which may control the localisation of precious opal. Regional geological mapping of the Eromanga sheet by the Commonwealth Bureau of Mineral Resources is in progress and this may indicate broad relationships between the geology and opal occurrence.

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THIS MONTH'S COVER

Our cover plate this month shows a fine example of first quality opal from Western Queensland. The original photograph was kindly made available by Mr. Doug Robinson of Brisbane.