

SEPTEMBER, 1975

P.O. Box 154,
Stanthorpe, Q., 4380.

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|--------------------------|------------------------|
| President | Mr. Noel Butler |
| Vice Presidents | Mr. Frank Wilkinson |
| | Mr. Maurice Passmore |
| Secretary | Mrs. Joan Stevenson |
| Treasurer | Mrs. Dot Archer |
| Newsletter Typist | Mrs. Dot Archer |
| Newsletter Sub-Committee | Mr. & Mrs. W. Cathcart |
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| Geology Officer | Mr. M. Passmore |
| Youth Officer | Mr. John Stevenson |
| Bushwalking Officer | Mr. R. McCosker |
| Committee Members | Mrs. Jean Harslett |
| | Mr. Errol Walker |

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MEETING S - 4th Wednesday of each Month in C.W.A. Rooms at 8.00 p.m.
OUTING S - Each Sunday preceeding the 4th Wednesday.

Sing le - \$1.50 Family - \$2.00

PROGRAMME

Place - Amiens Date Sept. 21, 1975 Organizer - Mr. Tom Archer
 & Mr. Tom Lancaster
Departure Time - 9.30 a.m. from Weeroona Park.

SPEAKER

Tom Archer -
Subject - Meteorology.

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Wednesday, August 27th, 1975.

Present 15
Apologies - 5.

The President, Mr. N. Butler, welcomed members and visitors.

MINUTES.

It was taken as read that the minutes of the previous meeting be accepted. Moved by Sister Joan and seconded by D. Pfrunder. CARRIED.

General Meeting Minutes continued:-

CORRESPONDENCE - Inward correspondence was received from:

Newsletters: Tmba. Field Nats - No. 264
 Down Under - Vol. 14 No. 3.
 Q'ld. Naturalist Club - No. 77
 National Park Assoc. - Vol. 45 No. 5.
 Warwick Walker - Vol. 3, No. 1.
 Chinnhilla Nats. - Vol. 9, No. 2.

Board of Adult Educ. re monthly returns.

Return thanks from Mrs. B. Harslett & Mr. Higgins.

Outward correspondence was sent to:

Dr. Kirkpatrick re October lecture.

Condolences to Mr. P. Higgins, Mr. & Mrs. W. Cathcart

Mr. Nealing - thanks for access to Sth Bald Rock

4 QS - Broadcast notice of outing & meeting.

Adult Education return.

It was moved by Mrs. M. Butler and seconded by M. Passmore that the Inward be received and outward correspondence be adopted. CARRIED.

TREASURER:- Mrs. D. Archer moved that credit balance of \$103.65 be received and accounts for Petty Cash to Secretary \$10.00 and reimbursement to F. Wilkinson \$8.00 be passed for payment. Seconded by Mr. Lomas. CARRIED.

OUTING REPORT: In the absence of leader Mr. M. Burkhardt the report on the outing to the century old homestead and area to Sandy Creek was given by Mr. F. Wilkinson. An attendance of 22 was pleasing for the day. Our thanks to Mr. Burkhardt for a most interesting day.

NEXT MEETING: With the start of the wildflower season the next outing will be in the Amiens area. Leaders will be T. Archer and T. Lancaster. Departure from Weeroona Park at 9.30 a.m. on Sept. 21.

NEXT MEETING: Next meeting will be Wednesday, Sept. 24 at 8 p.m. with Guest Speaker - Mr. T. Archer.

GENERAL BUSINESS: It was moved by Mr. F. Wilkinson and seconded by Mr. W. McCosker and carried unanimously that Mr. J. Heaton be made a member for 1975/76. This follows his donation to the club of his speakers fee granted for his lecture in April, 1975.

CLOSURE: There being no further business the meeting closed at 9 p.m.

SPEAKER: Following the meeting Mr. M. Passmore spoke of Elementary Science in reference to Geology.

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WILD FLOWER OUTING TO AMIENS - September 21, 1975

The following information about the Bright Hope mine was supplied by Jean Harslett. This mine is in the area we will be visiting but time will probably prevent us from seeing it.

BRIGHT HOPE TIN MINE (Ex page 412 Q'ld Govnt. Mining Journal 1920)

1920 Pikedale Tin Discovery by John H. Reid Government Geologist.

"News of a rather sensational discovery of tin in the Brisbane Press on 8th Sept. 1920 - I was thus instructed to report thereon - An examination was made on 10th

September 1920 and I now confirm by telegram. My preliminary report of the 11th

as follows: "Pikedale tin find was very much exaggerated in the first press reports.

(please turn to Page 5 of Magazine)

CONTINENTAL DRIFT. by Maurice Passmore.

As many members were interested in the lecture on this I'm again presenting it in the magazine. Firstly it is necessary to point out that this is a theory not a fact at this stage, but it is of course receiving wide recognition and its implications are being recognised in many fields. Opposition still exists however but I can't help feeling that geologists in the past have opposed it more on the basis of prejudice against Wegener, a meteorologist rather than on anything else.

The theory suggests that the surface of the earth is divided into a number of plates which are in constant motion. The edges of these are marked by lines of Volcanic seismic activity which are constantly changing and that much of the geological activity in the past has been associated with these edge movements.

Firstly however, let us examine why one would want to conceive such an idea. What is wrong with the concept of a rigid earth which has cooled from a hot mass. Briefly the arguments are -

1. Astronomical models of the earth's formation favour a process of cold accretion, in other words, a slow accumulation of dust and minor particles in the space about the sun. This explains the radical differences in the chemical composition of the planets, their distribution and size. Jupiter for instance is composed principally of solid hydrogen, which is of course the lightest of the gases on earth.

2. Radioactive decay produces heat which explains the liquid phase in the centre of the earth. The heat produced is sufficient to melt an originally cold earth and would certainly have prevented a hot one from cooling.

3. Radio active dating shows rocks are of different ages and that the age of the earth is approx 4.75×10^{12} years old. If the earth had simply cooled rocks would have to have been remelted and the predicted age is 1×10^8 (100 million) yrs. for the earth. Lunar exploration has supported the 4.75×10^{12} (4.75 billion) yrs. age.

4. The irregular distribution of the land masses which are quite distinct in age and geology from the sea floor is consistent with heating the cold earth rather than cooling a molten mass, as free energy tends to a minimum.

5. Fossil evidence requires the postulation of numerous land bridges or simultaneous and identical evolution of many species to explain their distribution. There is no evidence to support this.

6. Magnetic evidence shows that the magnetic poles must have moved wildly about if the land remained fixed. The effects on the Van Allen radiation belts would be inconceivable and the consequent changes in the weather would be dramatic to say the least.

7. As there is distinct proof that the land is rising in Scandinavia and Canada as a result of the last ice age, there seems no reason why the earth is not plastic. It is easier to explain horizontal movement than vertical ones which are opposed by gravity.

8. The absence of ancient deposits along the continental shelves particularly in the Atlantic deposits are probably no older than Jurassic. Important in all their consideration is that the present distribution has to have been derived from the hot mass cooling concept. If heating has occurred then by watching anything melt it is obvious movement occurs especially if the source of heat is not uniformly distributed.

Now let us consider the evidence which suggests the movement of land masses.

1. The most obvious point is the jigsaw matching of the edges of the continen-

Continental Drift continued -

tal shelves particularly those of Sth America - Africa and Africa, Madagascar - India-- Australia - East Antartica. In the northern hemisphere it is not as good being prior to the Southern hemisphere movement but it is significant that world wide there is less than one degree of mismatch at the continental shelves which are of course subject to erosion.

2. Associated with this is a similar geological matching

- (a) The formations of West Africa (Nigeria - Ghana) match the Santa Catharina formation around São Luis in Brazil. They represent an ancient craton and surrounding this are matching sediments, glacial tillites and ore deposits.
- (b) Permian coal deposits containing the distinct marker fossils *Glassopteris* and *Gangamopteris* can be matched in Eastern Africa, Madagascar, East Antartica and Australia.
- (c) Coal, limestone and iron ore deposits of Yampi Sound match with those in the Shingbhum of India.
- (d) Sediments characterized by *Archaeocyatha* corals that were subsequently invaded by igneous rocks in the ordovician have a parallel in Antartica as are later geosynclinal deposits in the Tasman trough.
- (e) Tillite deposits of the Permo-Carboniferous can be matched all over the proposed Sth hemisphere continent of Gondwanaland.
- (f) A series of faults can be matched across the nth Atlantic notably the Great Glen fault of Scotland with the Cabot fault extending from Boston to Newfoundland.

3. Sea floor spreading along definite ridges is to be found in the mid Atlantic, Indian and Pacific Oceans. The floor of the oceans have been found to be of quite recent origin (in marked contrast to the continents) and are predominantly basaltic. As we move away from these ridges we find the rocks age gradually increases. Thus it is obvious that the sea floor is gradually spreading outward from these ridges, and as volcanic activity is going on at present, it can be assumed that the process is continuing.

The position of the mid Atlantic ridge is also very significant as it is almost exactly mid way between the African and South American continents. Those in the Indian Ocean are not quite so obviously placed as there are several masses involved but again the process and movement is quite clear.

Of particular interest in recent times is the movement in the Mediterranean. The floor of this sea is quite remarkable as it consists of evaporites such as salt and gypsum which would be found in such places as Central Australia. Obviously the movement which opened the Straits of Gibraltar is a relatively recent one. What a spectacular waterfall that must have been.

In addition to areas of spreading, ^{if} the plate hypothesis is to be accepted, we need areas of crushing and sliding. The San Andreas fault system certainly gives an example of sliding along the edge from the rotation of a plate. The crushing is probably less obvious but the upthrust of the Himalayas and the earthquake belt through the middle East and Mediterranean Europe are an example.

5. Magnetic evidence provides one of the most useful tools for providing the detail of the theory. This depends upon the fact that the polarity of the earth's magnetic field (the north-south) reverses (to become south-north) at varying periods of time to create a unique pattern and time scale. This pattern can be subsequently decoded from igneous rocks that contain free iron. The iron forms into little rods that align themselves in the earth's magnetic field - in the way a compass needle acts - whilst the rock is liquid. Upon cooling this information is frozen into the rock for all time, thus fixing the position of the two magnetic poles. If we assume the poles have remained within one area (obviously there is some movement as we can detect this today) then we can plot the position of various land masses and various times.

Continental Drift continued --

The alternative of moving the poles produces some extraordinary wanderings and also splitting of the magnetic field.

5. Fossil evidence depends upon the distribution of various fossils within a wide range of strata (layers) preferably over a short time span. Thus man would make an ideal marker fossil being spread over the whole earth for a relatively short time so far, whilst a species such as the estuarine shellfish *Lingula* which has been around since the Cambrium is quite useless.

There are two basic assumptions to fossil work, one is that once a species become extinct it will never return and the other that it is highly improbable that a new species will appear simultaneously in two or more places. Thus if we find a fossil such as the Permian ferns *Glossopteris* and *Gangamopteris* in several countries then we must assume a common point of origin from which these ferns have spread. Thus there are two possibilities, either these land masses were once joined or there was some kind of bridge between them.

Of equal significance however is the evidence pointing to the fact that these land masses were not joined. The most obvious of these is where different species occupy a similar ecological niche. An example is the anteaters. In Australia we have the Echidna, in Asia the Pangolin, in Sth Africa the Aardvark and in Sth America the Ant Bear. Obviously these are separate today, but by studying their fossil record we can see for how long these areas have been separated, and similarly how long the seas have been joined. Such evidence is very useful for distinguishing when Nth & Sth America were joined. In this case it appears to have been in the early Pliocene and the North American species soon dominated both continents, in fact only the armadillo was successful in migrating north to displace its competitor.

There are many examples available of such things and many different approaches which all add to the evidence. The really significant part being that these different methods all lead in the same direction and also that if one applies the theory new evidence is found. Such is the scientific method.

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REPORT CONTINUED FROM PAGE 2. BRIGHT HOPE TIN MINE

No justification for the statement -- lode miles long -- values overstated. Ore occurs in Greisch probably in the form of a large pipe -- Only importance is due to first occurrence of its kind in Stanthorpe may lead to further discoveries in -- nothing to justify a rush" (end of the telegram)

"I was accompanied to the mine by the Warden for Stanthorpe (Mr. Meston). The discovery was made on prospecting area P.103 of 40 acres held by the Bright Hope Syndicate of whom the members are Messrs. McDonald, Hughes, Leslie, Trevetham, Shepherd, Clark and Wilson -- on portion 153 near the head of Swipers Gully. The following claims, 10 acres each, had been taken up by H.T. Walker, J. Wilson, H. Clark, C.T. Shepherd, Goodall, Becker and McBeth.

The country is rough and hilly with very large massive bouldery outcrops of "Stanthorpe" Granite between which outcrops are patches of deep sandy soil.

The workings consist of a trench about 18ft. long, 18 ins. deep and a shaft 35 feet deep with a drive from the bottom at about 8 ft. The tin bearing formation is probably an irregular shaped body or "pipe" surrounded by outcrops of bald granite -- The "pipe" may be described as Greisenised Aplitic granite. Greisen is granite altered in situ, by magmatic water, which converts feldspar into Mica. Aplitic granite is merely very fine grained and usually perthitic granite.

Analysis of samples are extremely disappointing -- The importance of the discovery is due only to the fact that this is a new type of tin bearing formation for the Stanthorpe District. Swipers Gully near the site of which this body lies has yielded payable amounts of tin.

September, 1975.

Amiens Outing continued -

We will depart from the usual place at the usual time and proceed along the Amiens Road for about 8 miles. Here we come to a bend in the road to the right with a power transformer on the corner. This is where we leave the bitumen and proceed straight ahead to Cowies Lookout which is on the edge of the Forestry.

At Cowies Lookout there are many most interestingly shaped boulders on which one can let ones imagination run riot. Hopefully also we shall find masses of wild flowers in full bloom.

After we have seen this area we shall travel further west along the Forestry road until we come opposite the Sow & Pigs where we will go in and have a look at these rock formations and the wildflowers.

