

**Critical Review of Charles Hapgood's interpretations of  
the Antarctic continent on the Piri Reis Map of 1513**

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## **Abstract**

This paper is a critical review of Charles Hapgood's interpretations of the Antarctic continent on the Piri Reis Map of 1513. His two books, Maps of the Ancient Sea Kings and Path of the Pole establish his hypothesis that the Piri Reis Map of 1513 shows the present day coastline of the Antarctic continent free of ice. Is his theory that the maps of Antarctica were made thousands of years ago by a lost civilisation credible or just the perfect foundation for the next science fiction novel?

## **1. Introduction**

In 1929 the Piri Reis Map of 1513 was found in Constantinople and caused great excitement because it was painted on parchment and dated in the Muslim year 919 (1513 on the Christian Calender). It depicted one of the earliest maps of America and was signed by an admiral of the Turkish Navy, Piri Reis. The surviving portion of this map, is only one third of the original map. The style of the map is a portolan sea chart. The dimensions of the surviving portion are 90 centimetres by 65 centimetres. It shows the Atlantic Ocean, islands and coasts. The many inscriptions are written in Arabic script but in the language of Ottoman Turkish. Most intriguing is a large continental landmass at the bottom of the map connected to South America. (McIntosh 2000)

Charles Hapgood investigated the map with particular attention to the depiction of the Antarctic continent. Considering that the continent was not discovered until 1819 when Thaddeus von Bellingshausen first landed on two islands of the Antarctic Peninsula the Piri Reis map had a striking agreement with the seismic profile across Queen Maud Land. In other words the Piri Reis map showed the rugged coast of Antarctica without the presence of ice. Hapgood surmises that temperate conditions had evidently prevailed in Antarctica in the not distant past and as recent as 6000 years ago making it possible for ancient map makers to have charted the ice free coastline.

This review will evaluate Hapgood's conclusions in light of today's historical and geological knowledge.

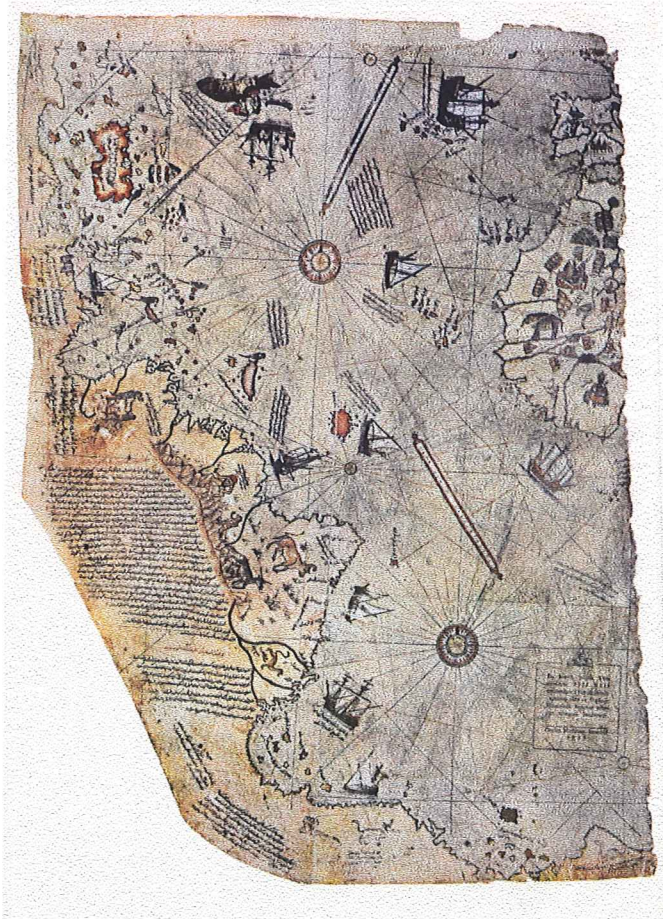
Key references include:

Charles Hapgood's, Maps of the Ancient Sea Kings and Path of the Poles.

Gregory McIntosh's, The Piri Reis Map of 1513.

## 2. Description of the Piri Reis Map of 1513

The Piri Reis map is a portolan-style map. This mapping style began in the 13<sup>th</sup> century as mariners' sea charts of coastal regions of the Mediterranean, Aegean and Black Seas and in the 16<sup>th</sup> century they included areas outside the customary Mediterranean region. The charts were designed to be of practical use to mariners by detailing coastal geography and sailing directions. They have an intersecting network of rhumb lines that extend from a circular pattern of compass roses. They lack indications of latitude and longitude although the equator, tropics of Cancer and Capricorn and the Arctic and Antarctic Circles were often shown. They are usually oriented with North at the top indicative of the nautical origin of using a magnetic compass. Place names on portolan charts are in red or black ink and indicate coastal features.



Piri Reis Map of 1513  
(Fig. 1)

The Piri Reis Map of 1513 has two large compass roses and three smaller compass roses and a partial network of rhumb lines. The positions of these roses and lines indicate that there were originally sixteen alternating large and small compass roses in a large circle around a central compass rose located in northeastern Africa.

Piri Reis Map of 1513 (Fig. 1)



### 3. Charles Hapgood's interpretation of the Piri Reis Map of 1513 in relation to the coastline of the Antarctic continent in his book Maps of the Ancient Sea Kings.

Charles Hapgood reviewed the work of Captain Arlington H. Mallery a engineer, navigator, archaeologist and author who was devoted to the study of old maps. Mallery's opinion was that the southernmost part of the Piri Reis map represented bays and islands of the Antarctic coast of Queen Maud Land now concealed under the Antarctic ice cap and that would imply that somebody had mapped this coast before the ice had appeared. (See Fig. 2) Hapgood believed that Mallery could be right and decided to investigate. The result of his investigation to find out simply whether the Antarctic coast appeared on the Piri Reis Map of 1513 is his book Maps of the Ancient Sea Kings. (Hapgood 1966)

Fig. 2 (McIntosh 2000:55)

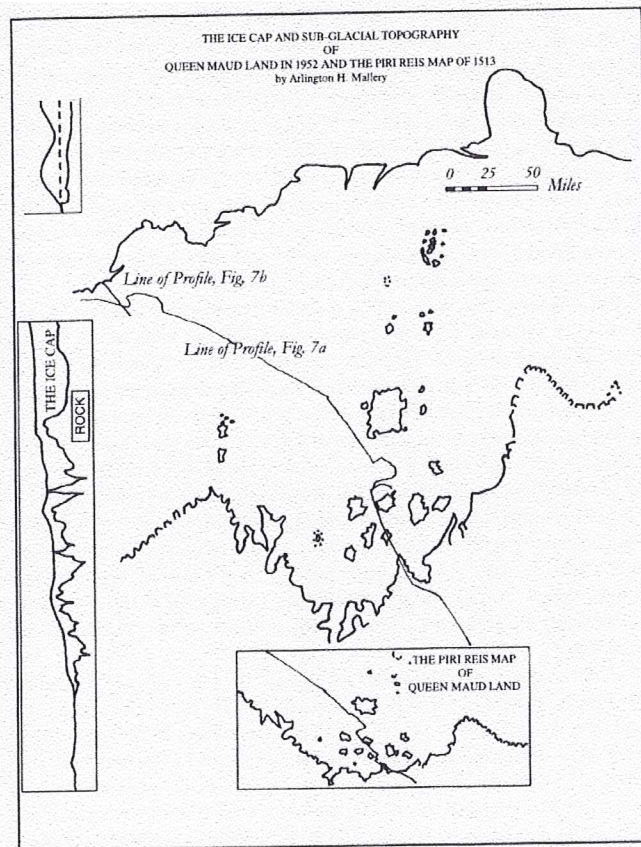


Figure 13. The Piri Reis map and the Swithinbank map as superimposed by Arlington H. Mallery. (Adapted from Arlington H. Mallery, *New and Old Discoveries in Antarctica*, radio broadcast by the Georgetown University Forum of the Air, Washington, D.C., 26 August 1956, p. E, following p. 4. Redrawn with some details omitted for clarity.)

In this book Hapgood describes the process he used to investigate the map. He tasked his students to unlock the secrets of the Piri Reis map. In the process many dead ends were encountered. The first major question was how to determine the projection used on the map. Through trial and error he and the students developed a theory for the projection that worked across the map. (Hapgood 1966)

*We found that some of the positions on the Piri Reis Map were very accurate, and some were far off. Gradually we became aware of the reasons for some of the inaccuracies in the map. We discovered that the map was a composite, made up by piecing together many maps of local areas (perhaps drawn at different times by different people), and that errors had been made in combining the original maps. (Hapgood, 1966:29)*

And...

*We have completed a study of the Piri Reis Map of 1513 and have concluded that it may contain a representation of part of the Antarctic coast drawn before the present ice cap covered it. We cannot estimate, of course, the lapse of time implied by these remarkable maps of Antarctica. But we have presented evidence that the deglacial or unglaciated period in the Antarctic cannot have come to an end later than 6000 years ago and must have existed for a very long time before that. (Hapgood 1966:99)*

Hapgood solicited help from the US Air Force in determining the present day coastline of Antarctica. Figure 3 is a copy of the letter he received in reply.

Fig. 3 (Hancock 1995:3)

8 Reconnaissance Technical Squadron (SAC) United States Airforce

6 July 1960

Subject: Admiral Piri Reis World Map

Dear Professor Hapgood,

Your request for evaluation of certain unusual features of the Piri Reis World Map of 1513 by this organization has been reviewed.

The claim that the lower part of the map portrays the Princess Martha Coast of Queen Maud Land Antarctica, and the Palmer Peninsula, is reasonable. We find this is the most logical and in all probability the correct interpretation of the map.

The geographical detail shown in the lower part of the map agrees very remarkably with the results of the seismic profile made across the top of the ice-cap by the Swedish-British Antarctic Expedition of 1949.

This indicates the coastline had been mapped before it was covered by the ice cap.

The ice cap in this region is now about a mile thick.

We have no idea how the data on this map can be reconciled with the supposed state of geographical knowledge in 1513.

Harold Z. Ohlmeyer

Lt Colonel, USAF

Commander

(Hancock 1995:3)

Hapgood's conclusions in his book Maps of the Ancient Sea Kings is that the Piri Reis Map of 1513 is of ancient vintage. It appeared to reflect an unexpected level of scientific achievement in Alexandrian science. The local map used to produce the Antarctic coast on the Piri Reis map was older than thought but may be as recent as 1000 BC along the Princess Martha Coast of Antarctica but in the Ross Sea area mapping would have had to been done at least 6000 years ago. (Hapgood 1966:98)



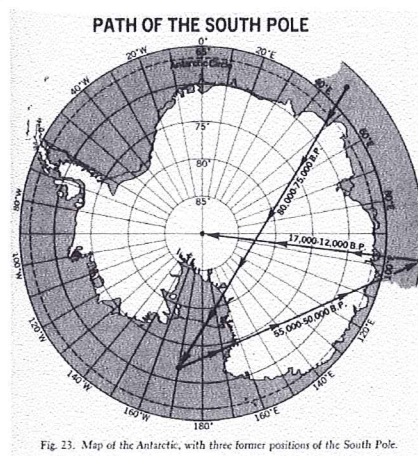
#### 4. Charles Hapgood's explanation of an ice free Antarctica as recent as 6000 years ago from his book Path of the Pole.

Much of Charles Hapgood's research on ice free Antarctica was from his earlier book Path of the Pole first published in 1958. In this book he concludes that the Earth's crust has slipped in the inner core many times in the past and thus changing the position of the pole, in other words polar shifting. Albert Einstein wrote the forward for this book and states, "The author has not confined himself to a simple presentation of this idea. I think that this rather astonishing, even fascinating, idea deserves the serious attention of anyone who concerns himself with the theory of the earth's development. (Hapgood 1958:xv)

In Path of the Pole, Hapgood concludes that the only ice age that is adequately explained is the present ice age in Antarctica. It exists because Antarctica is at the pole, and for no other reason. (Hapgood 1958:58)

Hapgood hypothesised that the North Pole was at one time at 60 N Lat and 83 W Long that the corresponding South Pole would have been located at 60 S and 97 E in the ocean off the Mac-Robertson Coast of Queen Maud Land, Antarctica. This would place the South Pole about seven times farther away from the head of the Ross Sea than it is now. (Fig. 4) We should expect, then, that the Ross Sea would not have been glaciated at that time. Hapgood provided proof of this from data collected from Dr. Jack Hough of the Byrd Expedition of 1947-48. Core samples from the bottom of the ocean off the Ross Sea were dated and showed alternations of types of sediment. The sediment indicated that no fewer than three times during the Pleistocene Epoch a temperate climate had prevailed in the Ross Sea and that the most recent temperate period had ended about 6000 years ago. (Hapgood, 1958:106)

Fig. 4 (Hapgood 1958:107)





## 5. Critical Review

The Piri Reis Map gives the impression that Antarctica may have been continuously surveyed over a period of several thousands of years as the ice cap gradually spread outwards from the interior, but not engulfing all the coasts of the southern continent until around 4000 BC. Therefore the original sources for the Piri Reis maps must have been prepared towards the end of this period when only the coasts of Antarctica were free of ice. (Hancock 1995:20)

Hapgood's conclusions sparked speculation by the science fiction community. They described the Piri Reis Map of 1513 as very accurately depicting the Antarctic continent as it would be without its two-mile thick cover of ice. They concluded that these maps were derived from the work of an unknown early people who were skilled seafarers and cartographers. Also that it appeared that somewhere in mankind's past there existed such a culture that traded across the seas beyond the Mediterranean. (Baigent 1998:155)

Two Canadian writers, Rand and Rose Flem-Arth suggested that the once ice-free Lesser Antarctica might be the true site of Atlantis. They point out that its geographical position places it at the centre of a 'world' ocean. They propose that Atlantis came to an end when the ice caps melted catastrophically sending great tidal waves across the 'world' ocean and that this sudden spread of cold water caused a rapid drop in the world's temperature. The survivors spread to all the known world bringing their gift of knowledge. (Baigent 1998:156)

Gregory C. McIntosh in his book *The Piri Reis Map of 1513* reviews Charles Hapgood's conclusions in the *Maps of the Ancient Sea Kings*. McIntosh determined that Hapgood must postulate certain distortions by the original mapmakers in order to make his identifications fit and that the book had a wide influence on popular writers. (McIntosh 2000:58) McIntosh goes on to state that Hapgood does not explain how the ancient preclassical or prehistoric maps were supposed to have survived for so long. If they were copied and recopied how is it that errors apparently did not occur. One would expect a large number of errors to occur if a map of the coastline of prehistoric Antarctica were copied many times over thousands of years. (McIntosh 2000:63) McIntosh also states that previous researchers such as Hapgood have matched almost every bay, promontory, coastal feature and geographical element with an existing feature. These researchers may not have understood that it was common for cartographers in the 16<sup>th</sup> century to draw coastlines and geographical features on their maps according to what they thought should be the case, not necessarily according to any knowledge of the actual geography. Hence

16<sup>th</sup> century maps commonly contain geographical features that did not exist. (McIntosh 2000:2)

Since Hapgood's research geological data has been collected that would put a few kinks in Hapgood's theories of polar shift and the Ross Sea floor cores.

Since Hapgood's book Path of the Pole was published in 1958 there have been changes to the theories of the Earth's crust. In the 1960s the theory of plate tectonics became widely accepted. Plate tectonics is defined as the slow lateral movements of segments of the Earth's hard outermost shell. It is the movement of plates that splits and moves continents. Therefore plate tectonics more aptly describes the movement of Antarctica from a warmer latitude to the isolation of the continent over the South Pole than Hapgood's polar shift mechanism. But plate tectonics involves time. Rate of movement of the crust is in 12cm/year increments. Not rapid enough to fit into Hapgood's time frame for prehistoric mapping of an ice free Antarctica.

E.W. Wolff in his review of "Signals of atmospheric pollution in polar snow and ice" states that the ice near the centre of the Antarctic continent at Lake Vostok is 150,000 years old. (Wolff 1990) This implies that the ice formation on Antarctica began much earlier than Hapgood's premise and even if it did encroach on the continent slowly that the Antarctic Peninsula and Queen Maud Land were probably covered in ice long before 6000 years ago.

I believe that Hapgood manipulated the projection of the map to fit his theories. He and his students superimposed on the Piri Reis map every conceivable combination of projection, rejecting the portions that did not work and keeping those that did. They seemed to work very hard at making it work. I do believe the Piri Reis map to be a compilation of older maps since mapping exploration in the time frame of 1513 would be very costly and time consuming. But I do not believe that the older maps were ancient, prehistoric maps. Like McIntosh, I believe that every time a map is copied errors would be made. Over time it is imaginable that the original map would not be recognisable so any inference that the coastline of the Piri Reis map correlates to the present day ice free coast line of Antarctica would be pure chance or manipulation of the data. A better explanation would be that the great southern continent of the 16<sup>th</sup> century maps is a legacy of older maps. These climatic maps prior to the 16<sup>th</sup> century divided the world by horizontal lines into sections Frigid, Temperate, Torrid, Temperate and Frigid. It was known that there was land to the far north so logically a landmass in the far south was needed to counterbalance the globe. (Tooley 1963:3) Piri Reis would have not wavered

from the norm of the day and would have included this landmass in the south to balance his world map.

## **6. Discussion and Conclusions**

Charles Hapgood will be remembered for his novel interpretation of the Piri Reis Map of 1513 and his theories of advanced peoples preceding all the peoples now known to history. But his theories are based too much on the manipulation of the map by omitting islands or adjusting sea level to fit his hypothesis. Perhaps the fact that the science fiction writers have latched onto his hypothesis as a truth and used it to fulfil their means is a statement to the feasibility of Hapgood's ideas.

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