A Journey into Rub’ Al Khali: The Southern Arabian Desert: Discussion

Charles Close; Arnold Wilson; Professor Seligman; C. H. Keith; C. L. Courtney


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Appendix G. Geology and Water-supply

[Long list of specimens with locality, altitude, and remarks not printed but preserved in Library.]

Note on the Collection by Mr. L. R. Cox of the Natural History Museum

The fossils collected are all Middle Eocene in age, and belong to species known to occur in India, Somaliland, or Egypt. The state of preservation, as casts in a white limestone matrix, is similar to that of the contemporaneous fossils of those countries. The following have been identified:

Gastropoda: —*Campanile* sp. (Wadi Dhahair); *“Natica” cf. *longa* Bellardi (Wadi Dhahair, Bin Ju’ai, and Sa’aten); *Gisortia murchisoni* (d’Arch. and Haime) (Wadi Dhahair).

Lamellibranchia: — *Lucina pharaonis* Bellardi (Hanfit); *Lucina nokbaensis* Oppenheim (Adhabugh); *Lucina cf. quadrata* Leymerie (Wadi Furum); *Cardium* sp. (Bin Ju’ai).

Among the other specimens collected four are geodes, the outer crust of which consists of chalcedony, lined with quartz. They are derived from the underlying sedimentary formation, and are of inorganic origin.

Note on Water Samples by Mr. F. B. Thole, Research Laboratory A. P. Oil Co., Sunbury-on-Thames

Analysis of water samples: — No. 12, from Al ‘Ain Mughsin, South Arabia—spring and pools of brackish water: height 450 feet (39 c.s.).; and No. 25, from Hanun, South Arabia—large natural waterhole in fissure in W. Gabatan: height 1860 feet (50 c.s.).

The details obtainable are:

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<thead>
<tr>
<th></th>
<th>Ca</th>
<th>Mg</th>
<th>Cl</th>
<th>SO₄</th>
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<tr>
<td>No. 12</td>
<td>.</td>
<td>.</td>
<td>3'5</td>
<td>2'9</td>
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<td>No. 25</td>
<td>.</td>
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<td>1'9</td>
<td>1'05</td>
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All figures quoted in gms./litre. The samples would not allow of any further analyses, and the figures must be taken as approximate only, due to the smallness of samples.

Note on the above by Mr. B. K. Wyllie, Geological Branch A. P. Oil Co.

The Sunbury report shows that both samples have a relatively high mineral content, consisting of calcium, magnesium, chloride, and sulphate. Analysis of the figures however indicates that some other acid radicle must have been present in a proportion nearly equal to sulphate plus chloride. This can scarcely be anything but carbonate or bicarbonate. It is difficult to believe that some sodium was not associated with Ca and Mg in the amounts shown.

DISCUSSION

Before the paper the President (Colonel Sir Charles Close) said: I am sorry that our English climate has prevented a larger attendance, because the paper to which we are about to listen is perhaps the most important of the whole session. I should say, to commence with, that any ordinary well-informed person if he or she were asked what regions on this Earth were left to be explored, in the primary sense, would certainly include the great southern desert of Arabia, the Rub’ al Khali, the empty quarter, which has been the subject of conjecture for hundreds of years. It is true that we know very little about that quarter, but we
have had some papers read before the Society which have described what may be called the fringes of it. First, we had Major Cheesman’s explorations in 1923; then Mr. G. M. Lees gave us a paper on Oman and the Southern Coast of Arabia in 1925–26; and later we had a paper by Mr. Bertram Thomas, who described the south-eastern borderland. All that was, so to speak, touching—not very closely, but almost touching—the edge of that great desert.

To-night Sir Arnold Wilson has very kindly consented to read a paper that Mr. Bertram Thomas has written on his remarkable journey, during which he actually got into that great unknown desert. He did not arrive, perhaps, at the centre, but it was an exploration of unusual merit and of some hardship. It was an exploration which many geographers would have been only too anxious to undertake had it been possible, but, as we shall hear in the course of the lecture, that sort of exploration in Arabia is a matter which depends very largely on the circumstances of the time. It is not possible to say, offhand, that with the utmost pluck, utmost determination, and utmost skill you will succeed. Mr. Bertram Thomas did, in fact, succeed in getting farther than any other European has ever got from the south. He, perhaps for the first time, will give us some idea of that great desert. I will not detain you any longer, but ask Sir Arnold Wilson if he will kindly read the paper, and I hope he will begin with a few remarks of his own.

Sir Arnold Wilson then read the paper printed above, prefacing it with the following remarks:

Sir ARNOLD WILSON: I must in the first place make it clear that the subject of this paper is altogether outside those parts of the Middle East of which I have personal knowledge. I have known the writer, Mr. Bertram Thomas, for more than twelve years, first in the stormy days of Mesopotamia during and after the War, and later in Trans-Jordan: he has held the position which he at present occupies, that of Financial Adviser to His Highness the Sultan of Muscat and Oman, for some five years. In this connection he is primarily responsible to His Highness for the maintenance of the minimum of governance essential for the well-being of Oman—on a strip of coast running from Musandam to Dhufar and beyond, and as far inland as human beings can penetrate. The journey which I am about to describe to you lay in territory wholly within the dominions of H.H. the Sultan, under whose authority and aegis he travelled.

It is not the first important voyage of discovery that Mr. Thomas has performed in Oman. In 1928 he made the journey by land from Sur to Dhufar, in circumstances of considerable danger and great difficulty. It was a strip of territory till then wholly unknown, regarding which our geographical knowledge was restricted to such scraps of information as could be gleaned from the coast, which itself had for the most part been unvisited by survey ships since the days of Hayes, Brucks, and Wellsted. His journey was fruitful of scientific and practical results, some of which have been embodied in papers read before this Society and the Royal Anthropological Institute; a further paper dealing with linguistic studies will shortly appear in the Journal of the Royal Asiatic Society.

In the course of this journey Mr. Thomas obtained information from tribes living in the hinterland which threw considerable light upon the geographical problems of the Rub' al Khali: the knowledge thus gained strengthened him in his determination to penetrate as far as he could into the dead heart of the Arabian continent—an area as large as Germany, France and Spain combined, which has hitherto baffled the enterprise of geographers, travellers, and historians from the days of Ptolemy onwards.

What little was known of it at the beginning of the present century was recorded
by the late Dr. Hogarth in his book 'The Penetration of Arabia' (1905), where he describes the Rub' al Khali in the following words:

“A virgin tract, obscure enough to give a geographer pause ere he argue of its unknown content from the other parts of the peninsula. Between the innermost points reached by Europeans in their attempts to penetrate it, intervenes a dark space of six hundred and fifty miles' span from north to south, and eight hundred and fifty from west to east. This unseen area covers considerably more than half a million square miles, or not much less than half the whole superficies of Arabia. Such an expanse is vast enough to hide many secrets of which the geographer has no inkling as yet; it does, in fact, hide certain half-secrets that he suspects but cannot unriddle. Until it be better explored, the problem of the course and destination of all the copious inland drainage of the south-western part of the peninsula remains insoluble. There may be an important central lake, as Chedufau thought, or there may be more than one, or there may be a southern trans-Arabian channel above or below ground, longer and more important than the Rumma channel in the north. Resultant on such watercourses there may be unknown tracts of fertility and nomad or settled societies of which no rumour has reached us. Or there may be none of these things, but only sand and rock. Until the southern area be better explored, we remain ignorant of the general direction of the main South Arabian slopes, of the relation borne by the south-eastern projection of the peninsula to the rest of the continental mass, and of the origin of the northern Hadramaut waters, and the ultimate fate of the southern waters of Nejd.”

Three explorers claim to have had distant views of the mysterious tract in the south-east of Arabia—the Rub' al Khali of the maps—Wellsted from the crest of Jabal Akhdhar in Oman in 1836, Wrede from a point north of the main Wadi Hadramaut in 1843, and Halery on his passage from the Jafu of Yemen to Najran in 1870. Of these only Wellsted can be regarded as geographically reliable, for reasons given by Hogarth. Doughty refers to it in the following terms:

“I never found any Arabian who had ought to tell, even by hearsay, of that dreadful country. Haply it is Nefud with quicksands, which might be entered into and even passed with milch dromedaries in the spring weeks.”

Burton and Palgrave (in his paper before this Society) were somewhat less negative, but scarcely less vague, in their reports. Hogarth concludes his chapter on the subject as follows:

“There is reason to think that there is a considerable tract of desert pasture immediately north of Hadramaut, locally called Nejd and roamed by the Kathiri Bedawins, as well as to east of it, held by the Mahra; while similar pastures stretch far to westward of Jabal Akhdar. There, as Miles heard, Awami and Aal Morrah Bedawins rear camels in a steppe diversified by dwarf acacia shrubs, and able to furnish water every three or four days to the travellers, who pass in twenty-five marches between Nejd and the Mahra country.”

It has remained for Mr. Thomas to penetrate virtually to the centre of this great arid waste.

On reference to the map it will be seen that Mr. Thomas has demonstrated that the whole coastal area from longitude 51° to 54° is drained inland by a single system of wadis through a vast sandstone steppe, falling from south to north and from west to east. The six wadis all rise at about 3000 feet, three days' march from the coast, and terminate in the sands at a height of not more than 400 feet above sea-level. There is therefore (I make this remark on my own responsibility) a reasonable probability that during the pluvial—of course pre-historic period—the area now occupied by the sands may have been a great inland lake.
In addition to the narrative of his journey, from which I have read extracts to you, Mr. Thomas has collected a number of fossils and rock specimens which are already in the British Museum. On these I will not say more here than that they suffice to indicate with fair accuracy the general nature of the strata traversed. He has also made a useful collection of skins, birds and beasts, great and small, which are now being examined by the experts of the Natural History Museum where his collection will in due course be stored. A skull from an ancient burial ground collected by him has reached England and has been deposited with the Royal Anthropological Institute. Finally, he has collected further data of great interest and value in regard to the tribal and racial problems of this area.

The journey, of which I have given you an outline, together with that of 1928, constitute an achievement of first-class importance in the realm of geographical discovery. They both cover ground hitherto almost wholly unvisited by any European, and unmapped except from the sea. Mr. Thomas's reports are the first authentic record of the nature of a tract of country nearly as large as England, which has been for over a century a subject of active speculation, and of which no sort of record previously existed. It is much that he should have succeeded in making these journeys: it is more that he should have done so in his capacity as the right-hand man of the territorial ruler, H.H. the Sultan of Muscat. It is, above all, creditable that he should have equipped himself so thoroughly for his task as to be able to fix his position from day to day with a sextant, and to collect single handed so much scientific information.

The geographical problems of this part of the Arabian continent are not yet completely solved, but the first and greatest step has been taken towards the final elucidation of the Riddle of the Sands.

The President: We have heard that certain anthropological material has been sent home, including a skull. Professor Seligman is present, and we should be glad if he would comment on this material.

Professor Seligman: The anthropological material actually sent home by Mr. Thomas consists of one skull and a series of measurements. Those measurements make it possible to say whether the people he has described are long-headed or short-headed, a point of great interest to anthropologists because the shape of the head is one of the principal criteria of race.

If you will allow me, I must hark back a little to Mr. Thomas's former papers, one read here, the other published in the Journal of the Royal Anthropological Institute. In those papers Mr. Thomas dealt with certain tribes from whom he had collected vocabularies. Naturally enough, when he first came back to this country with a number of new dialects, if not new languages, and having travelled among peoples who seemed to him very different from the Arabs he knew, he cherished the hope that these unknown tribes were not Semitic but Hamitic. It was in an endeavour to solve this question that he took the measurements and collected the skull.

All Hamites, we know, are long-headed; almost all the measurements taken by Mr. Thomas prove to be those of round-headed people. As regards the skull, although there is nothing in its anatomy that definitely excludes the possibility of its being Hamitic, the measurements render it exceedingly unlikely that it is so. Considering together the measurements of the skull and the measurements of the living, it can be said fairly definitely that the people are not Hamites, and when the individual measurements are examined and compared with the photographs published—not those seen to-night, because we could not see much of individual characteristics on the screen—it seems obvious that these people, although they speak non-Arabic dialects of Semitic, physically do
not differ greatly from the inhabitants of the Yemen in the opposite corner of Arabia.

As regards the age of the skull, it was found in a bricked-up cave in a rock, a method of burial which, as Mr. Thomas points out, was popular in pre-Muhammadan times, but which is also in use at the present day when a traveller dies and cannot be given orthodox burial. I do not wish to be dogmatic, but the appearance of the skull does not suggest such antiquity as is implied by a pre-Islamic date. I should suppose it to be a fair sample of the present-day population, and, as has been said, its measurements tally very closely with those of the living.

Summing up, I come to the conclusion that these extremely interesting people Mr. Thomas has been among are in fact Southern Arabs, a people who, as far as head shape is concerned, differ from their northern neighbours in that they are predominantly round-headed.

Squadron-Leader C. H. Keith: Some little while ago I heard that this paper was to be read to-night, and, having been a fellow traveller with Mr. Thomas in Oman in 1927, I asked if I might attend. I did not realize, when the Secretary very kindly agreed to my coming, that I should be asked to speak, and I really do not feel, in the light of what you have heard to-night, that I am in any way qualified to amplify the very able paper to which we have listened.

It happened in 1927 that, after I had acquired a coastal acquaintance of the Persian Gulf and Oman, it became necessary for me to journey across the Oman peninsula. Mr. Thomas was anxious to make this journey and, from his exceptional knowledge of the tribes and country, I was only too glad that he should come with me. In fact, I had no option, because he arranged with the Sultan that this should be a condition of my travelling across Oman. There are one or two small points in connection with such a journey that may interest you and may be appropriate following on this paper, dealing with the technical sides of such a journey rather than with the actual happenings on the journey, of which you have already been told.

As I was going a journey into the unknown, I was particularly concerned with having an accurate knowledge of our whereabouts at the various places at which we stopped. The maps which were available have been compiled largely from information supplied by travellers visiting the country at various dates. In such countries when one asks the distance between two places the reply invariably is given in terms of "camel-days journey," and such would not have been accurate enough for my purpose. When I went down to the Gulf from Baghdad, I tried to get a theodolite, but was unable to do so, so the next best thing appeared to be what I can only describe as "putting a ship ashore," i.e. using a navigational sextant and a supply of mercury for an artificial horizon, and taking double-altitude sights of stars and sun. Another problem was to get an accurate knowledge of time. I had in my possession at that time a chronograph watch, which I attempted to rate with the chronometers of the naval ship in which I travelled, but the results were not very happy. Finally I decided to take observations on the time recorded by the chronograph I had with me and to reverse the normal process: instead of receiving wireless time-signals, to broadcast my own inaccurate time in the hope that the ship would receive that and ultimately give me the correct time to check back the sights. Moving in a country where the sun's altitude is high during the day, I found sun sights were practically impossible, and so relied on taking star sights at night. There I was faced with another difficulty: in the evening time the humidity is excessive, and the refraction error of star sights at night an unknown quantity. The only remedy appeared to be to take a number of sights, picking altitudes of about the same value, and not to apply any correction for refraction. As a rough-and-ready method we found this
worked out very well for fixing positions. Mr. Thomas subsequently obtained a sextant and, I believe, has used the same method. The only time we used the sun was when taking compass bearings, when we wanted to determine the local magnetic error.

When I started on that journey I was rather apprehensive as to what might happen in case our camels were stolen, and so I took from India a wireless transmitter, but not a receiver. I did not take the latter because camel transport would have made matters difficult for accumulators and the heat would probably have resulted in dry cells giving trouble. We broadcast from the transmitter and found this a useful means of keeping in touch with the outer world. One thus has an opportunity of saying what is essential without receiving adverse comments.

Before starting on the journey, on the advice of the then Political Resident, I arranged for a medical officer to come with us, to look after the health of those making the journey, to make friends with the tribes by treating their sick, and to collect medical data. On the first score he was very valuable, in that we all got across without sickness. It was part of his duty at every halt to test the water, and as time went on and water became scarcer and scarcer in the open country, his horror at the impurity of it increased.

For treating the tribes and making friends with them, I think the medical officer's services were invaluable. Every time we halted he opened his surgery, and, as his fame spread, the natives used to bring in their most unsavoury halt and maimed, some having travelled considerable distances over the mountains. He worked for hours on end during the sweltering heat of the day, his work being rendered particularly difficult owing to the religion of the natives not allowing them to take anaesthetics. All the surgery was done in cold blood, but their training is such that they never flinched. So great was the doctor's fame that at one place the Shaikh came and asked him to treat his women folk. The doctor came to me very troubled that morning. I sent him off with his instruments in his hands and his heart in his mouth; but he returned safe and sound, having been accorded the privilege of seeing the women unveiled. He told us some were quite beautiful, but this we rather doubted. During that journey the doctor collected a very considerable amount of interesting medical observations and data—the subject of a lengthy report. I am not a medical man, but one point may be of interest. There is a general impression that the native is immune to the effects of malaria. Every case which the doctor examined he found to be suffering from the enlarged malarial spleens, showing, in fact, that the Arab is no more immune to malaria than the white man. He collected a variety of types of malaria mosquito.

I should like, if I may, to record my congratulations to Mr. Thomas on his latest achievement. At the time he journeyed with me his ambition was to penetrate into the Rub' al Khali, the empty quarter. From a personal knowledge of him, I am sure that his determination and his optimism alone carried him through this extremely difficult journey about which we have heard this evening. Travelling in such countries is not an easy matter. As to the journey which I made, I feel certain that, had it not been for Mr. Thomas's expert knowledge of the language and his unfailing optimism, we should never have got across the Oman peninsula. In the past only two white people have ever crossed this peninsula: Zwymner, the American Missionary, in 1896, and Sir Percy Cox in 1902. Mr. Thomas was a very great strength to our expedition. He possesses an amazing determination in the face of difficulties, which is characteristic of the type of Britisher one hopes to find in those countries which have yet to be explored.

Group Captain C. L. COURTNEY (r.a.f.): I am afraid I have no excuse to offer for joining in this hitherto interesting discussion except the fact that the Royal
Air Force are particularly interested in certain parts of the country which have been described this evening. I suppose it has occurred to most of us who keep in touch with current events that the very great difficulties in transport which Mr. Thomas must have encountered on his journey might perhaps in the future give way to modern inventions, and in point of fact I think we are in measurable distance of seeing something of that kind.

The Royal Air Force are interested in the part of the world that Mr. Thomas penetrated because at Aden we have a certain number of aeroplanes, and at Basra, at the head of the Persian Gulf, we have a good many more. It is our intention to try to join these two groups of aircraft by means of an air route which will enable us to reinforce in times of emergency one from the other. With that object in view aircraft from Basra have already reached Ras-el-Hadd, the easternmost point of Arabia, while aircraft from Aden have established a chain of landing-grounds as far as Dhufar. A landing-ground has been established at Salala, the place from which Mr. Thomas started his explorations. From there in April last aircraft penetrated, roughly, 100 miles into the interior and actually came within sight of the extensive desert which was the object of Mr. Thomas's expedition. Needless to say, any protracted exploration by means of aircraft into unknown country has to be very carefully organized. Before anything useful can be done it is necessary to establish advanced landing-grounds with petrol and supplies of all kinds. But when one thinks that within the space of a few hours an aeroplane penetrated from the coast to perhaps within a few miles, for all one knows—I have not any accurate details—of the point that Mr. Thomas arrived at, then one has some indication of what aircraft may be expected to do in the future.

The President: The hour is late, so we had perhaps better bring the discussion to a close. We have listened to the most important communication that we have received on the subject of the great Southern Desert of Arabia. We may not all perhaps fully realize how important that information is and how much Mr. Bertram Thomas did, but I feel sure that those who know best and who have studied the subject will realize that he has given us a valuable communication, and that we owe him a deep debt of gratitude. We owe him also a debt of gratitude for the admirable photographs which he took under difficult conditions. He speaks in the report, which I have had the pleasure of reading, of the difficulty of taking photographs with the sand blowing about. All these things add to the troubles of life in such a country as Arabia.

We must also express our gratitude to His Highness the Sultan of Muscat and Oman for enabling the expedition to take place. We feel greatly obliged to His Highness because without his aid and assistance the journey could not possibly have taken place.

Mr. Thomas, among other things, from time to time fixed his position, and we know that a journey which is taken without positions being fixed in a proper geographical manner is not of as much use as it might be. I was interested in the remarks of Squadron-Leader Keith on broadcasting and fixing the traveller's position by means of signals sent from him.

We owe sincere thanks to Sir Arnold Wilson for his kindness in reading the paper. We are most grateful to him and thank him for the trouble that he has taken.