FROM HASA TO OMAN BY CAR

DESMOND VESEY-FITZGERALD

This account of a motor journey in Eastern Arabia was submitted to the Geographical Review *in February, 1948. Publication has been delayed through a series of difficulties, in particular the author's inaccessibility during extensive field journeys and the loss of the original route map in the mails. Nevertheless, we present it herewith: Arabia is an area of great interest in current world affairs, and, so far as we are able to determine, there exists no other published account of the entire route traveled by Mr. Vesey-Fitzgerald. Unfortunately, the author has not had the opportunity to see the proof of his article.*

IN THE course of nearly five years of locust hunting on the Arabian peninsula I have several times had to take vehicles back and forth between Saudi Arabia and Oman; in fact, on one occasion I drove in a jeep and a light (eight hundredweight) desert car from Cairo to Muscat—probably the first recorded journey by car overland to Oman. Parts of the route lay in unexplored country, and other parts were little known and had not been used by wheeled traffic. The present paper describes these parts.

Details of a camel route from Hofuf to Buraimi, compiled largely from native information, are included in Volume 2 of the British Admiralty's Handbook of Arabia (1917). This camel route follows in general a more southerly course than the motor route here described, passing from well to well along the edge of the Rub' al Khali. But the country traversed is for the most part too sandy for wheeled traffic, and the motor route runs nearer the coast, where water is scarcer but firmer country provides better going.

From Saudi Arabia to the Trucial Coast

The starting point is Al Khobar, a little port accommodating country craft and launches, and the Arabian American Oil Company's base for its traffic with Bahrein Island. From Al Khobar a coastal track, frequently used by both the Saudi Arabian government and Aramco, leads via Dharan to Oqair, a distance of 70 miles. This track crosses salt flats, *sabkha,* and a few short spurs of sand. During dry weather, and for light cars, the going is excellent, but heavy vehicles encounter trouble on the salt flats after rain and, moreover, cause extensive damage to the track. The small port of Oqair is used by country craft carrying merchandise destined for Hofuf, but because of the sandiness of the country inland, no satisfactory motor route to the interior can be developed, and the town lacks prosperity and future.

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For 20 miles from Oqair a little-used track runs southeast by south between sand dunes and the sea across level country studded with hummocky saltbush; all types of vehicles should be able to cross this section without difficulty. The next 15 miles, on the same bearing, is over trackless, hummocky sand with tussocks of *Panicum turgidum,* a type of terrain generally known as *dikaka,* which is difficult going even for four-wheel-drive vehicles unless the sand has been recently moistened by rain. Detours are possible, however, and a rather better route can be picked to suit the particular circumstances or weather.

Thirty-five miles from Oqair a prominent flat-topped ridge lies to the east with some salt flats along its base, which present heavy but not dangerous going. This is a part of the Oqair Escarpment, and an easy gradient leads to the top. On top, a level gravel plain offers excellent going except for occasional—and usually unexpected—gullies and some patches of hummocky blown sand. The latter, however, can usually be bypassed. For the next 30 miles a southerly course takes one out of sight of the sea but within sight of the Djafura dunes of red sand some miles across the plain to the west. The route then bears round to southeast by east and continues on gravel plain for 20 miles over the heights above the Jau es Saen, at the southwest end of the Bahr Salwa inlet, from which one can look down over the eastern lowlands and across the deep-blue water of the inlet to the Qatar peninsula beyond.

At this point, 85 miles from Oqair, it is possible to find a way down the escarpment by easy stages over firm gravel, somewhat gullied, to the edge of the Sabkha Salwa and an abandoned corrugated-iron hut that belonged to American oil prospectors. There is an open spring here, but the water is too brackish to drink.

The hills enclosing the sabkha are flat-topped, with outcrops of horizontal strata. They appear to be perfectly barren, though saltbush (Chenopodiaceae and Zygophyllaceae) grows in valleys around their base. The sabkha itself is a dead-level wilderness with a crusty surface that breaks up into flakes and in places is covered with innumerable turret shells of marine origin; certainly in the past the Salwa inlet extended over the surface of the sabkha, and even at the present time the sea flows far inland at certain states of the tide and wind.

There are two main types of sabkha here. One has a dark-colored, flaky surface, below which there is moist sand for about a foot and then "bottomless" gray mud. This type supports no vegetation whatever. The second has a light-colored surface, often dry and powdery or concrete-hard, composed of

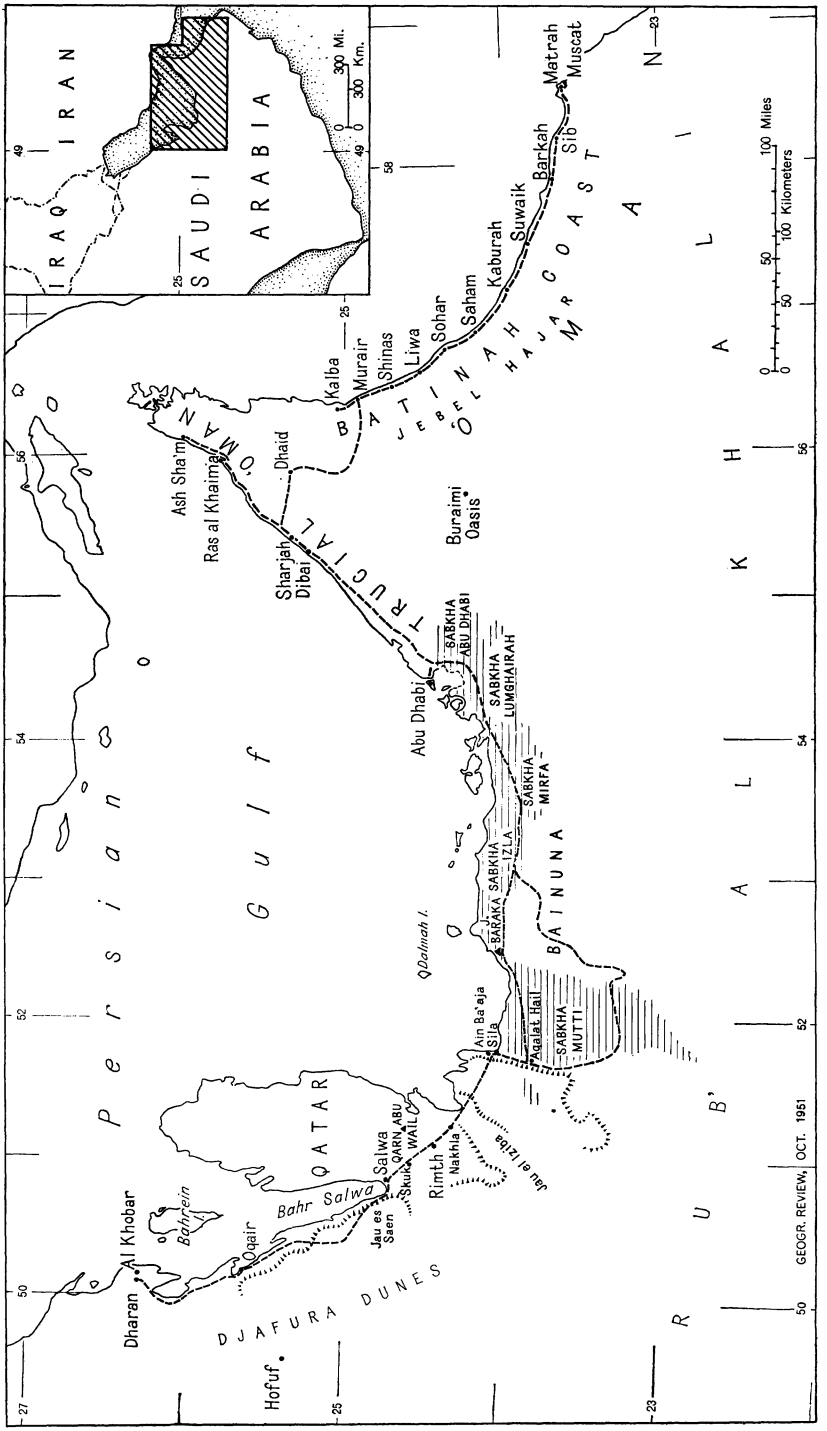

FIG. 1—Sketch map showing the author's route from Al Khobar to Muscat.

crystals and small turret shells. Below, however, there is pure white mud, and it is therefore an extremely treacherous surface for motoring. Saltbush often grows on this type of sabkha.

There seems to be no very satisfactory way of avoiding the Salwa sabkha without making a wide detour inland, but, on the other hand, except during or immediately after rainy weather a careful driver should get across near the coast without encountering too many misfortunes.

From the hut two main routes offer some hope of success. The first strikes south-southeast across the virgin flats and was heavy going before Locust Unit convoys rolled out a consolidated track. Occasional patches of soft, moist clay lie beneath the flaky surface, and there seems to be no way of telling the dangerous parts, since the surface stretches with monotonous sameness for mile after mile. However, there are definite bad patches or "sump" areas, and if one car sinks in, another that tries to pass it will probably come to grief also. The leading car should therefore proceed with the utmost caution. It is also a good idea to examine the track made by the leader for cracks, since the "skin" of the sabkha may support one car but when cracked may let the following ones through. Careful driving is essential because stopping or starting or great variation in speed may cause the surface to collapse. One part of the sabkha near this crossing had a hard, smooth, concretelike surface, across which I was tempted to speed with a lightly loaded three-tonner. Suddenly the "concrete" cracked like ice, and the truck settled in an oozing morass that had the consistency of melting ice cream. The truck was only saved from complete disappearance by being hastily unloaded and supported on rafts hacked from the surface of the sabkha. Several sand islands in the sabkha provide convenient refuges and may be used, if the sand is not too dry and soft, for short detours.

After about 10 miles the course changes to northeast by east and leads toward a prominent flat-topped hill called Qarn Abu Wail, above the abandoned settlement of Skuk, on safe ground on the far side of the sabkha.

The second route, which is rather better if there has been any rain, lies in the direction of Salwa itself, marked by a small cluster of palms (but no settlement) at the edge of the inlet. The palms can be easily seen across the salt flats from the hut. A direct course can be set if the sabkha has not been softened by rain; otherwise the edge must be skirted until the tidal part is reached, which is usually compact, though pools of sea water may be lying on its surface.

From the Salwa palms a direct course must be steered toward Qarn Abu Wail, making as much use as possible of any raised ground. However, at

least one ribbon of sabkha is unavoidable, and several hundred yards of this is very soft and likely to cause trouble to any but light vehicles. The only way I have ever got a convoy over this place was by building up a track with dry sand wherever the surface showed signs of collapse. In dry weather, however, no trouble should be experienced along this route. From the hut to Skuk is about 16 miles.

There is a shallow well at Salwa, but the water is suitable only for camels; at Skuk, however, there are several wells of fairly good (potable) water. From Skuk the route improves; it bears roughly 120° along a low ridge drained on each side by shallow gullies and flanked by sabkha that becomes flooded after rain, but the route itself is stony and firm. This leads to a depression between low escarpments, known as Jau es Salaam; the floor is broken, but the going is firm. It is 20 miles from Skuk to the end of the depression, where there is an easy gradient to the lip of the enclosing escarpment.

The rocks at the top of the escarpment, polished by wind-driven sand, glisten in the sun like a glacier. High dunes of yellow sand with ribbed hollows in between lie across the track; all the loose sand seems to be blown away by the wind, and the dunes are firm and rounded. The area is practically devoid of vegetation, and there are no hummocks. Whenever I have used this route, the dunes have been in excellent condition for motoring; all types of vehicles can switchback across them, holding as far as possible to a course of 120° and taking care not to fly off a crest into space, a mishap that is highly likely when the lack of shadow makes it practically impossible to judge the steepness of the slopes. This district generally goes by the name of Rimth. The dune belt is about 15 miles wide, and on the far side, below some very high dunes, there is a small clump of date palms by a buried well, which is known, appropriately enough, as Nakhla (the date palm). From Nakhla well a gravel strip forms a natural highway through the rest of the dune belt.

From Nakhla the general bearing is 135° for about 30 miles. There are several small, lakelike sabkhas in the vicinity, which it is advisable to work round unless they are perfectly dry, and beyond these there is a short stretch of sandy country where a considerable amount of perennial vegetation grows on hummocks; the *Calligonum comosum* bushes provide excellent firewood. Glimpses of the sea to the north may be seen.

Beyond the sandy stretch an extensive gravel plain of good going is crossed for about 30 miles, bearing 135°. A large depression of rather broken country across the route is probably the easternmost extension of the Jau el

Iziba, but it is not difficult to pick a reasonably good way down the enclosing escarpment, across the valley, and up the other side. A prominent group of *ghaf* trees (*Prosopis*) on the top of the coastal escarpment marks Ain Ba'aja, one mile to the east just below, halfway up the escarpment from the coast. The well is a shallow water hole revetted with stones and contains about four feet of very dirty water full of mosquito larvae but fresh enough to be drinkable. The well is apparently perennial and is much frequented by Manasir graziers and travelers. Four miles to the south in a similar location is another water hole, Sila, surrounded by a greensward and marked by one or two small date palms, but the water is brackish and teeming with mosquito larvae. From this point the deep blue of the sea and the yellow of the arid land make a strikingly beautiful scene.

From the ghaf trees we went south along the top of the escarpment above the extensive flats of the notorious Sabkha Mutti until we found a convenient way down. Then we continued south between the foot of the escarpment and the sabkha through rough, sandy country with saltbush hummocks to Aqalat Hail, 20 miles south of Ain Ba'aja, where there are said to be some rather brackish wells.

So far the journey had been entirely in Saudi territory. The frontier post is situated at a well called Ain el Khisa, at the edge of the Salwa sabkha, but since the whole country is now practically uninhabited, exact boundaries cannot be defined. It seems generally agreed that the Sabkha Mutti forms the boundary between Saudi Arabia and Trucial Oman and that eastward to Abu Dhabi the coastland for the distance of "one camel journey" inland is Trucial territory. What happens beyond the one day's journey nobody knows, since that is the edge of the Rub' al Khali, the great no man's land of South Arabia.

Geologists of the Arabian American Oil Company have surveyed most of the area that is certainly Saudi territory (that is, west of longitude 52° 00′ E.); east of the Sabkha Mutti the country remains unexplored.

The Sabkha Mutti forms a serious barrier to desert travel, both by car and by camel. On this trip, my first visit (January 29, 1943), the sabkha was dry. From Aqalat Hail we struck out due east across the flats, and after only a mile and a half of somewhat chancy going we arrived at a patch of firm gravelly sand supporting scanty saltbush. We crossed its bumpy surface for 15 miles to another patch of salt flat, four miles wide, and then there was dry sand again. The hills on the far side of the Mutti flats loomed on the horizon —Jebel Baraka, on the coast, at 64°; Jebel Wotoid, some little way inland, at 78½°. We continued east for another five miles, following winding camel

paths, over a dimpled surface glistening with needlelike crystals arranged in packets. The going was rather heavy but perfectly dry and safe. Jebel Baraka was now bearing at 59°, and Wotoid at 77°. We altered course to northeast by east so as to bear down on Baraka, and seven miles of level sabkha brought us to the coast. The superficial six inches of this part of the sabkha was composed of powdery sand and small sea shells, into which the wheels sank. Below the sand was a hard limy pan about two inches thick, and below this a

FIG. 2—A reconnaissance car in difficulties in the sabkha. Photograph by Middle East Anti-Locust Unit.

foot of lightly cemented sand and shells overlying a very hard layer through which it was impossible to dig. After eight miles along the coast we reached the foot of Baraka; the total crossing of the Sabkha Mutti was thus 40 miles.

I took the opportunity of a short halt for coffee to climb to the top of the hill and view the surrounding country. The hill stands at the edge of the sea; at high tide the waves lap against the small cliffs at its base. The water was a wonderful blue, paler toward the coast, and flocks of flamingos formed a pink edging to the beach. To the northeast a long, rocky peninsula jutted into the sea, for which I was given the name of Shuihan. Beyond this, and rather more to the east, rose a jagged black range of low hills, Jebel Dhanna, about 20 miles distant. Several islands lay offshore. On the horizon at 356° the island of Dalmah could be seen; an island closer in at 36° was called El Said. Inland the country was an arid plain of reddish sand supporting only scanty and dry desert scrub vegetation, mostly plants of the family Chenopodiaceae.

From Jebel Baraka we took a course of 82°, across salt flats for the first

three miles and then, for 14 miles, over a plain of pinkish-colored sand from which rose scattered flat-topped hillocks. The surface was dry and powdery, and much of the going proved heavy. In hollows there are salt flats liable to flood after rain, but the water, which may stand for some months, is brackish.

The next 20 miles was on a bearing of 95° across sandy country sprinkled with limestone fragments and crossed by low, flat-topped ridges. This district is known as the Bainuna, and it extends over a wide area between the

FIG. 3—A three-ton support truck stuck in the sabkha. Photograph by Middle East Anti-Locust Unit.

coast and the sandy edge of the Rub' al Khali. It is a dry, white country, practically uninhabited except by infrequent travelers and occasional small encampments of Manasir who come to graze their stock after rains. Small, isolated, flat-topped hills rise from a soft plain of small, rough white pebbles (limestone) and much powdery sand. Coarser white sand covers certain areas, and here there are usually some dwarf shrubs or grass tussocks on hummocks; elsewhere the vegetation is sparse except after rain, when a scanty growth of a few annuals is noticeable in some places. In the coastal area the most characteristic feature is perhaps the endless salt flats. When dry, these often have a bumpy, powdery surface, which breaks up into whitish or pinkish dust. Large areas are covered with a salty-sandy crust or fine white deposits of salt alone. After rain these flats are liable to flood, but naturally the water is extremely salt. No fresh water is to be found throughout the Bainuna, except possibly in a few water holes reported to exist in the Jebel Dhanna massif, though there are said to be some salty wells in the

sands to the south where camels can drink. The Manasir Bedouin when they visit the Bainuna drink only camel's milk.

We continued due east across the sandy plain for eight miles, to the first of a succession of sabkhas separated by spurs one or two miles wide. The sea was about five miles to the north, but of course the distance varies greatly with the state of the wind and tide, since the whole coast is dead-flat sabkha. The typical limestone country of flat-topped hills and stony-sandy plains receded to the south, where it could be seen as a low escarpment bounding the inland edge of the sabkhas.

On the far side of the fourth sabkha we rose up onto a plain of sand with flat-topped ridges; more salt flats lay to the north and south. We traveled over this plain for four miles and then dropped down to the vast Sabkha Lumghairah, the eastern part of which goes by the name of Selmiyah. The sea was about five miles to the north and the inland escarpment about 10 miles to the south. We set off on a bearing of 60° and were soon out of sight of all "land." We traveled over this "land-sea" for 44 miles. About halfway across we picked up some old car tracks, the first sign of returning civilization of a sort, for we were now approaching the inhabited parts of the Trucial Coast. Following these old tracks, we soon sighted "land" in the form of a low limestone escarpment.

On top of the escarpment there was a level plain of dusty sand and limestone fragments, with very sparse vegetation. We crossed this on a bearing of 60° for one mile and then dropped down to the Sabkha Abu Dhabi. Twenty miles across (10 miles at 80°, 7 at 40°, 3 at 20°) we cut into the Buraimi–Abu Dhabi track, which we followed for seven miles (330°). The sea now lay to the northwest but was out of sight in the mirage, and low, flat hills rose one to five miles inland.

This brought us to a narrow creek, with a forbidding little watchtower in midstream flying the flag of Abu Dhabi and guarding all approaches to the island on which the town is built. The tide was high, so we could not get across, though there is a rough causeway that is partly dry at low water and fairly safe for light cars. But the tide here is most irregular and depends largely on the wind. It is said that low water at Abu Dhabi is usually about four hours after low water at Sharjah, but I have found it better to cross this creek very early in the morning, when there is usually no wind. The town of Abu Dhabi is on the open coast of the island, 10 miles north-northwest of the creek.

From the creek a well-marked and frequently used motor track runs up the coast to Sharjah, a distance of 129 miles. It crosses many salt flats, most of

which have soft patches that are treacherous for heavy vehicles, but for light cars the going is fairly good.[1]

From the Trucial Coast to the Batinah Coast

This section of the route was opened up by the Middle East Anti-Locust Unit in the summer of 1943. Although the topographic obstacles were not great, earlier journeys had been handicapped by the unsettled politics of the country traversed. It was difficult to find out who was the paramount sheikh of the districts that had to be crossed, and the mountain-valley tribesmen resented cars passing through. As a result, rifle fire often interrupted our journeys. Later the cooperation of the ruling family of Kalba was obtained (this house also controls the forts at Dhaid), and under its protection the route was developed and peaceful travel established.

From Sharjah the route follows the Ras al Khaima track for about seven miles and then forks off to the east; although the track is well defined, there is no landmark by which the junction can be recognized on the surface of the featureless salt flat. The route continues across sabkha (surface treacherous off track) for another seven miles or so, to the dune country. The track here is sandy, and there are some ridges to cross, the steeper sides of which face the east. This track is often in good condition after winter rains, and it is passable even in summer by all vehicles with a four-wheel drive. However, much low-gear work is necessary, and it is therefore an advantage to travel during the cooler hours. At about mile 25 there is a well, Tui Rashid, from which good water can be obtained at 20–30 feet. At mile 31 the Wadi Baidha is reached in the vicinity of the forts and palm gardens of Felidj el Ali, where abundant water is available. The track then runs up the wadi bed for about six miles to Dhaid, by this route 37 miles from Sharjah.

It is possible to bypass the worst of the dunes in summer by going up the Wadi Baidha from the Sharjah–Ras al Khaima track; the distance between Sharjah and Dhaid by this route is 65 miles. The sand can be avoided altogether by making a long detour round the north end via Ras al Khaima and thence running south up the Jiry to Dhaid. However, the distance between Sharjah and Dhaid by this route is 102 miles.[2]

Abundant water is available at Dhaid. From this place no motor route existed before the Middle East Anti-Locust Unit opened one through the mountains to the Batinah Coast. Details are given in the following table.[3]

[1] Appendixes, similar to the table on p. 554, giving details of the various sections of the route, are on file at the Society's building. For the Sharjah-Abu Dhabi section see Appendix II.—Edit. Note.

[2] For further details of this route see Appendix III.—Edit. Note.

[3] From Appendix IV, which also gives other information.—Edit. Note.

MILEAGE	DISTANCE	BEARING	LOCATION	NOTES	DISTANCE	BEARING
0	6	150°	Dhaid (assumed position, 25°21′N.,55°51′E.)	Track over firm grit; cross a wadi at mile 4 in which Tui Wusha (well) is situated.		
6	16	180°		Winding route between hummocks; silty and sandy ground.	6	330°
8				Ridge of lava boulders 1 mile wide crossed by partly cleared track, then gravel plain; firm going between J. Faiya (4 miles distant) and main range (8 miles distant).		
11			Tui Hamda (well; good water)	Cross wadi bed at well;hummocky sand and silt, firm track but many runnels.		
22	4	170°	Felie (water available)	Ruined forts and subterranean water canal; route continuous over firm gravel and silt.	16	360°
26	4	160°			4	350°
30	1	120°		Ascend gravel bed of wadi draining from main range across broken country.	4	340°
31	14	90°		Gravel rather loose in places and a narrow gorge (subsequently widened).	1	300°
42			El Qor village (palms and running water)	Down wadi bed; surface, loose gravel and boulders.		
45	2	100°		Route very winding down bed of wadi to and beyond Nusula.	14	270°
47	2	170°			2	280°
49	1	70°			2	350°
50	3	115°	Hiwiera (palms)		1	250°
53	1	90°	Rafat (palms)		3	295°
54	1	145°			1	270°
55	2	50°	Nusula village (palms and running water)		1	325°

MILEAGE	DISTANCE	BEARING	LOCATION	NOTES	DISTANCE	BEARING
57	2	100°			2	230°
59	4	35°	Aswad fort	Leave wadi and travel across boulder plain.	2	280°
63	3	25°			4	215°
66			Murair village (assumed position, 24°56′N.,56°23′E.)	Seacoast.	3	205°
70						
77						

The Batinah Coast Route to Muscat

The long run down the Batinah Coast to Muscat (nearly 200 miles) is one continuous series of spring-breaking bumps by way of narrow, dusty lanes through cultivated land alternating with surf-pounded beaches and punctuated by frequent wadi mouths liable to flooding after rains. Along many stretches "inland" and "beach" alternatives exist, and a local driver, well used to the run, can gain considerable time by selecting the most suitable route for the particular conditions of tide and weather. It is impossible without much more experience to give detailed bearings and instructions for disentangling these deviations, which anyway are frequently changed for agricultural reasons. There are numerous villages along the route at which direction can be sought. Ten miles an hour can seldom be exceeded, and the route is little used by motor traffic. Water is plentiful, and fresh food can be purchased at the villages. Gasoline is sometimes available at the larger towns.

Murair to Shinas. In this section the road is a narrow lane, with a bumpy earth surface, running through palm gardens that fringe the coast immediately inland of the village. Many fishing hamlets with palm-frond huts are passed, and five watercourses, usually dry except after rain, must be crossed.

Shinas is dominated by a partly ruined castle that houses the *wali,* the Sultan's representative, and as he is the northernmost governor on the Batinah, it is necessary to call on him to report arrival and pick up a *rafik,* or official guard.

Shinas to Sohar. From Shinas to the south there is a choice of three routes. One crosses the inland gravel plain, a second passes through the palm

gardens, and the third crosses salt flats near the coast. In general, the nearer the coast, the better the track, but a few miles out of Shinas there is a creek that cannot be crossed at high tide near the coast but can be bypassed on the inland route. At the mouth of the Wadi Nabur, 15 miles from Shinas, the coastal route turns inland to follow the wadi bed for 200 yards and then continues for five miles through the palm groves to Liwa. Liwa village stands

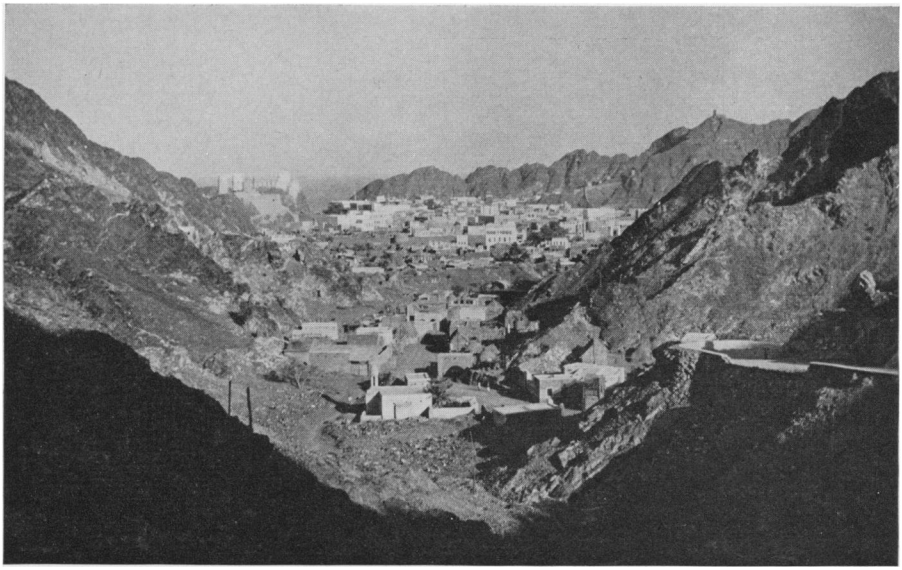

FIG. 4—Journey's end at Muscat. Photograph by Middle East Anti-Locust Unit.

in the midst of palm gardens about two miles from the sea. It has a large castle, the residence of the local wali; from the central tower there is a splendid view of the Hajar mountain range, to the west across an acacia-dotted gravel plain. It is not necessary to pass through Liwa, which can be left a short distance to the west, and the journey may then be continued by two alternative routes. If the tide is low, it is better to run down to the beach by the castle and village of Harmul, on the coast about two miles east of Liwa, and then drive along the firm beach sand for 14 miles to Sohar. If the tide is high, it is necessary to use the inland route, a narrow, bumpy lane through continuous palm groves.

Sohar was the ancient capital of the Batinah. It is an old walled coastal town, now partly in ruins. However, the senior wali of the northern Batinah still resides in the crumbling castle, so it is necessary to call on him and obtain a free pass to Muscat. From the top of the castle keep there is a magnificent view across the stony plain to the western mountains. To the north and

south the green belt of palms runs parallel to the featureless, sandy coast line, pounded by the surf of the open sea. Within the town wall are many empty spaces and ruined dwellings; dilapidated palm-thatch hovels stand on the debris of Sohar's former importance.

Sohar to Kaburah. From Sohar the route runs parallel to the coast, following a narrow, bumpy earth lane through date groves and crossing three

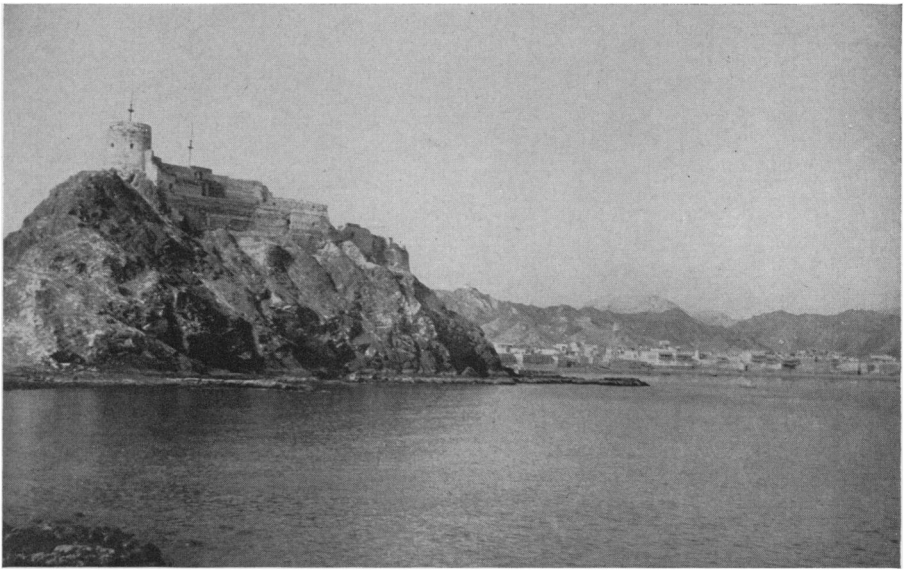

FIG. 5—Muscat from the sea. Photograph by Middle East Anti-Locust Unit.

wadies (liable to flooding after rain but usually dry and presenting no difficulty). The coastal village of Saham, 17 miles from Sohar, can be bypassed by continuing through the palms a little way inland. Three miles farther on, another wadi is crossed; beyond this the track, now ill defined, passes through a series of small fishing villages on the sandy beach above high-water mark. Several *khors* (creeks at the mouths of wadies) can be bypassed by turning inland. By this route it is 43 miles from Sohar to Kaburah, but at low tide it is possible to shorten the distance to about 36 miles by driving most of the way along a firm beach.

Kaburah to Suwaik. Beyond Kaburah a narrow, bumpy track, poorly defined in many places, passes in and out of cultivated land, mostly across salty wasteland fringing the palm gardens. Sections of the track run along ridges of discolored loose sand (heavy going) above high-water mark. Travel along the beach, even at low tide, is interrupted by patches of soft sand, rocky outcrops, and mouths of creeks, which often contain muddy-

bottomed water. At Suwaik, 25 miles from Kaburah, there is a large, partly ruined castle, the residence of the local wali, on whom it is desirable to call, and who usually invites the traveler to spend the night.

Suwaik to Barkah. From Suwaik a narrow, bumpy track leads in and out of the palm groves and across wasteland. Fifteen miles from Suwaik is the town of Masna'ah, with a fine castle, the residence of the local wali; a courtesy call is desirable. Between Masna'ah and Barkah two major wadies (liable to flooding) are crossed. Barkah is a walled town with a castle (everything practically in ruins), which is the residence of the local wali; a call here is also desirable.

Barkah to Sib. For about five miles the route follows a narrow, bumpy lane through palm groves and then—rather better going—crosses the inland acacia-stippled gravel plain to the mouth of the great Wadi Samail, which drains the slopes of the Jebel Akhdhar and is said to provide access to the interior. The track runs down the wadi, through cultivation, to the coast and then along beach sand for a mile to Sib.

Sib to Muscat. From Sib, two miles through cultivated land and across wadi mouths brings one to an open, silty plain with a scattering of saltbush, sea lavender, and tamarisk and ridges of sand, but no cultivation. A well-marked but very bumpy track (liable to flooding after rain) crosses this country for about 13 miles to Gubara, a small village with palms. At this point it becomes necessary to hug the coast for four miles. At low water it is possible to go along the beach at the edge of the surf, but at high water it is necessary to cross loose sand above the beach, which is extremely heavy going. There is, however, a deviation that can, and should, be used at high tide—across the gravel plain for about four miles to the village of Bosha, and thence by way of a mountain track and down a shingly wadi to the police post at Riwi.

From a mangrove-fringed creek at the end of the beach a made-up road runs through the hills for the remaining 10 miles to Muscat. The road goes east for two miles and then climbs a gravel wadi bed between rocky spurs on a bearing of 120° for three miles to the customs gate at Riwi, where travelers must report to the police. From Riwi village the road climbs north-northeast for two miles to Bait el Felidj, which has a police post and a hill-girt airstrip suitable for small planes. Only small cars should proceed beyond this point, because of the extremely narrow mountain and city roads ahead.

From Bait el Felidj the road drops down to Matrah (1½ miles), which it enters by a narrow gate. A recently constructed motor road links Matrah with Muscat (two miles); it passes round a headland, climbs steeply to a saddle, and winds precipitously down to Muscat city gate. Extreme caution

is needed on this section of the route, because a good deal of traffic uses it. The streets of the small town, extremely narrow and twisty, are hardly suitable for motoring.

FURTHER NOTES ON THE SABKHA MUTTI

I arrived at the edge of the Sabkha Mutti once again on January 1, 1944. This time rain had fallen, and the vast surface of the sabkha, spreading out to the eastern and southern horizons, was largely covered with shining sheets of water or glistening white salt incrustation. We camped 10 miles south of Ain Ba'aja and then reconnoitered our track of the preceding year. We crossed the first arm of the sabkha to the raised island of sand and gravel, but this was now surrounded by sodden areas, though in many places there was a hardpan or crystalline layer about a foot below the surface. We found the parts covered with standing water or salt crust to be better going than some of the parts with a pebbly surface, which were saturated and so swollen that the surface had the consistency of thick porridge.

We could find no practicable way across the sabkha in any direction, and on our return we got the jeep hopelessly stuck. We were unable to extricate it before dark and had to call for help from our camp, eight miles away, by lighting gasoline flares.

On our second attempt we drove along under the escarpment to the sea and then followed a course parallel to the coast eastward across flat, sandy country, broken by a firm-bottomed wadi along which floodwater flowed to the sea. On the other side of the wadi our course was at first rather south of east, still parallel to the coast, over a flat, firm, gritty surface with scattered saltbush; the edge of the sea was some distance to the north. We gradually worked round to due east; the surface remained firm for a distance of 20 miles from the escarpment. The "land" to the west disappeared from view, but we picked up no sign of Jebel Baraka to the east. At this point, however, the surface deteriorated, and we struck a wet sabkha composed of heavy mud filled with solid crystals. Here we picked up tracks of our last year's journey, and upon that occasion I had noted the surface as "powdery dry."

The gritty strip we had left is called El Gezira, "The Island," which is probably a suitable name because we could find no safe way off it toward the east. We changed course to the north, across bare flats that must sometimes be covered by the tide, since we found stranded cuttlefish and driftwood; but the coast is most indefinite here, and we never actually saw the sea, though the shimmering mirage continually produced the illusion of an incoming tide. Below the surface skin there was a slushy bed of salt crystals, which caused even the jeeps to bog down, so we returned to camp by the way we had come.

Having failed to find either a direct or a coastal crossing because of the heavy floods, we next tried far to the south, on the assumption that the rains had probably been lighter inland.

From our camp (10 miles south of Ain Ba'aja) we drove south-southwest across an elevated plain of varicolored rounded pebbles—ventifacts—overlying dusty sand between the Sabkha Mutti to the east and the Et Tarfa depression to the west, for about 34 miles to the end of the escarpment, and then descended to Bath el Mijan, a depression of broken country with a gritty or sandy surface and some small glistening white salt flats. We

crossed round below the escarpment over loose, dusty sand for three miles, topped a ridge, and dropped to a vast plain of rounded, colored pebbles, which made rather soft going. High dunes could be seen to the south, so we set a course to the south-southeast to mile 56. This brought us to the edge of a large sabkha, evidently an inland "fang" of the Mutti, which had a dry crust of salt and sand; the flats were flanked by high red dunes completely destitute of plant life. We crossed the sabkha for 10 miles to a narrow belt of golden dunes; beyond this we continued on a bearing of 75° for another five miles of sabkha. The surface then became sandy and ribbed, but fortunately we were able to travel parallel to the corrugations, though it was heavy going, for 10 miles.

At mile 88 we were in a barren wilderness of ribbed and salty sand without a sign of animal or plant life. Rain had recently fallen, probably for the first time in many years, and there were numerous temporary pools of brackish water. A winding course was therefore necessary, but we continued in a general southeast direction for 13 miles over sabkha with a rippled surface. Then we turned northeast and after 35 miles past extensive dunes to the east in which the well of Umm Lashtan is said to lie we came to typical Bainuna country, where hollows were filled with limestone fragments and powdery sand lay between low, flat-topped ridges.[4]

Although we had been unsuccessful on this occasion in finding a coastal crossing, we subsequently discovered a route along the beach that can be used even when the sabkha is flooded. Starting from the Sila water hole, the beach route runs south over the sabkha below the escarpment, and then parallel to the coast but some little way inland over heavy white sand for a total distance of seven miles. A word of warning is necessary here, especially to travelers coming from the east. The beach immediately below Sila is extremely treacherous and beset with quicksands, though "dry land" is only a few hundred yards ahead. Moreover, the low coastal dunes enclosing the beach are composed of "dead" coral sand, over which it is impossible to drive even with double gear. Lastly, at high tide, and during a fresh wind, the waves pound right up against the dunes. All these facts I have found out by bitter experience; for once, when returning from Oman, we had a whole convoy of some 30 vehicles trapped at this spot and overwhelmed by the sea!

However, seven miles from the escarpment it is safe, and indeed essential, to drive down onto the beach, which at low tide is a broad, firm stretch of sand. There may be pools left by the tide, but they usually indicate hard ground and so are safe to cross. On the other hand, parts of the beach have a rocky crust that overlies soft mud, and these places are most dangerous for heavy vehicles. Inland there is sabkha of dangerous salty mud and gravel islands, as was noted above. It is best to drive all the time about 200–400 yards from low-water mark and not to venture inland at all.

At mile 23 from Sila we picked up Jebel Baraka on the eastern horizon, and at mile 27 the beach narrowed and the surface deteriorated somewhat, being very bumpy in places. Above high-water mark there was white sand with saltbush.

At mile 30 it is best to come off the beach, which is rather easy at this point, and then continue along the sandy strip above high-water mark, which is fair going. There is one creek to cross at mile 32, draining floodwater off the sabkha, but the bottom was found to be hard. Jebel Baraka is reached at mile 40.

[4] For the continuation of this route to the coast at Abu Dhabi and other details see Appendix V. —EDIT. NOTE.