

# A Canvas Boat on the Dead Sea

BY ELLSWORTH HUNTINGTON, *Ph.D.*

Department of Geography, Yale University

WHERE the Jordan River, grown turbid in its swift descent from the snows of Hermon, pours its light waters into the heavy brine of the Dead Sea, the sweet faint odors of the surrounding desert are displaced by the invigorating scent of salt marshes. Aside from the refreshing odor and the sight of sky and sea, there is little to suggest the lands with which the Occidental is familiar. Standing west of the mouth of the Jordan, on a beach of pebbles and cobblestones piled with gray branches of dead trees, the traveller sees on the right, southward, the deep waters of the Dead Sea, bounded on either side by a level-topped line of brown cliffs growing purple in the distance. At times the sea is dark blue, but in a quarter of an hour, as the wind changes, it may become peacock green and then pale pea-green, with purple shadows where clouds obscure for a space the hazy sky. On the left still lagoons, not salt like the sea, but merely brackish, are fringed with tall green reeds, back of which stand feathery tamarisk bushes, whose spikes of dainty white blossoms give out a delicate scent fit for a fairy princess. In front to the eastward across the rushing waters of the cool river the little mount of Pisgah, whence Moses surveyed the Promised Land, forms a gently sloping brown dome rising slightly above the smooth, treeless sky-line of the plateau of Moab.

In all the view there is no sign of man except a fisherman's hut of rude timber and rushes set among the reeds by a lagoon, and a small patch of green fields at Suweimeh on the plain at the base of Pisgah, where Sodom possibly stood of old. To the west above the barren escarpment of the Judean plateau the tower on the Mount of Olives, only eighteen miles away, is also in sight;

but it belongs to another world far removed from the sunken, heat-stricken depression of the Dead Sea. The view does not suggest death or desolation; for ducks, geese, and gulls swarm over the lagoons and over the shallow water of the delta, which is only a foot or two deep for half a mile from land. Here and there a kingfisher with white or yellowish breast poises with beating wings, then sinks and finally drops like a shot into the brackish water of the lagoons, only to rise and dive again in half a minute; cranes and bitterns flap slowly along, with legs stretched far astern; hawks, too, soar overhead; and far out in the shallow water of the delta, among scores of stranded tree trunks, tall whitish birds wade busily about, picking up food from a sea that is supposed to be dead. A sound alarms the long-necked fowl, and as they take wing a rosy flush like dawn shows that they are flamingoes.

The abundant life of plant and bird about the delta of the Jordan almost makes one suspect that the sea has been misnamed; that it is not dead, but living. Go along the lifeless beach away from the Jordan for a mile or two, however, and note the entire absence of shell-fish and water-loving insects, and even of algæ. Look at the gaunt groups of dead tamarisk bushes or palms that stand offshore at the mouth of the occasional trickling streams at the base of the plateaus. They bear potent witness to the deadening power of the water, which during the past thirty years has risen six or eight feet. Or stand by the mouth of the Jordan and watch the muddy stream. Something white shines and is sucked under—a dead fish floating seaward; and after the first a second and perhaps a third, killed by the bitter brine of the sea even before actually reaching

it. The refreshing smell of salt marshes is in reality for the most part the odor of decaying plants and animals killed by the saline water. The Dead Sea well deserves its name.

The famous naturalist Humboldt expressed the belief that in all the world no geological phenomenon is so profoundly important as the great depression of the Ghor in which lie the Jordan Valley and the Dead Sea. Not only is the Ghor in itself a marvellous example of a long narrow slice of the earth's crust dropped thousands of feet below the plateaus on either side, but also it has had an almost incalculable influence upon human progress by reason of its effect in isolating Judea from the inroads of the wild tribes of Arabia. Yet, strangely enough, or rather very naturally, in view of its inhospitable physical character, the Ghor is even now but slightly known. Thousands of tourists visit it annually, to be sure, driving from Jerusalem to Jericho, and then to the Bathing Place on the Jordan and to the northern end of the Dead Sea, a carriage ride of a day and a half. Few, however, realize the importance of the place; many, indeed, complain that the drive is fatiguing, and that, as one stout, tired tourist put the matter, it is scarcely worth while to go to so much trouble for the sake of fifteen minutes at the Jordan and a minute and a half at the Dead Sea, which was all that the managers of his tour would allow him.

In order to form a somewhat intimate acquaintance with the Ghor, and especially in order to be able to study the old shore-lines of the Dead Sea, the Yale Expedition of 1909 to Palestine took as part of its equipment a fourteen-foot folding-boat of canvas. At Constantinople we were fortunately warned that the Dead Sea and the Jordan Valley are the private property of the Sultan, who has sold to a Jew and an Arab the exclusive right to put boats upon the sea. They have fitted up an old forty-foot sloop with a ten-horse-power kerosene-engine, and this with two tenders forms the entire Dead Sea fleet. The fishermen on the lower Jordan, sea-loving Greeks who still preserve the instincts fostered by the islands and bays of their fatherland, built some good-sized boats for use on

the sea a few years ago, but were never allowed to launch them; and the craft now lie rotting among the pebbles and driftwood of the beach. The sloop of the concessionnaires makes occasional trips up and down the lake, to bring a few loads of barley from the southeast, or very rarely to carry passengers; but for the most part the boat lies idle. It does not appear to be a very profitable speculation, although a well-equipped tourist launch might easily be made to pay if the remarkable nature of the scenery of the lake were once known. Thanks to our warning, we informed the American ambassador at Constantinople of our purpose to navigate the Dead Sea, and through his kind offices obtained permission to sail our little craft where we pleased. Otherwise we should have shared the fate of the Greek fishermen and been obliged to confine our navigation to the beach, for the watchman at the landing-place protested violently against our infringement of the rights of his "patrons," and would not be quiet till a soldier came from the Mudir at Jericho to confirm our permit.

Our trip to the Dead Sea began at Jerusalem on March 12, 1909. Sending our baggage direct by wagon to Jericho, Mr. Graham and the writer made a southward détour by way of the well-known Greek monastery of Mar Saba, which, with that of St. Catharine on Mount Sinai, is supposed to be the oldest monastery now in existence. The soldier who was to be our guide failed to appear, and we were obliged to trust to the horse-boy, Ahmed, an Arab of almost pure negro appearance, who did not know the road. Leaving the city by the Vale of Hinnom, we rode past vile-smelling pools of ordure kept for fertilizing the famous cauliflowers and other vegetables of the little gardens of Jerusalem, and went down the absolutely dry valley of the so-called "brook" Kedron between gray slopes composed of horizontal limestone strata scantily clothed with grass, and suggesting velvet with the nap rubbed off. At noon we reached Mar Saba, where an unusually hard layer of limestone arches up a little and causes the fine gorge on the brink of which the monastery is perched. A mild Greek priest, who had spent a year in New York

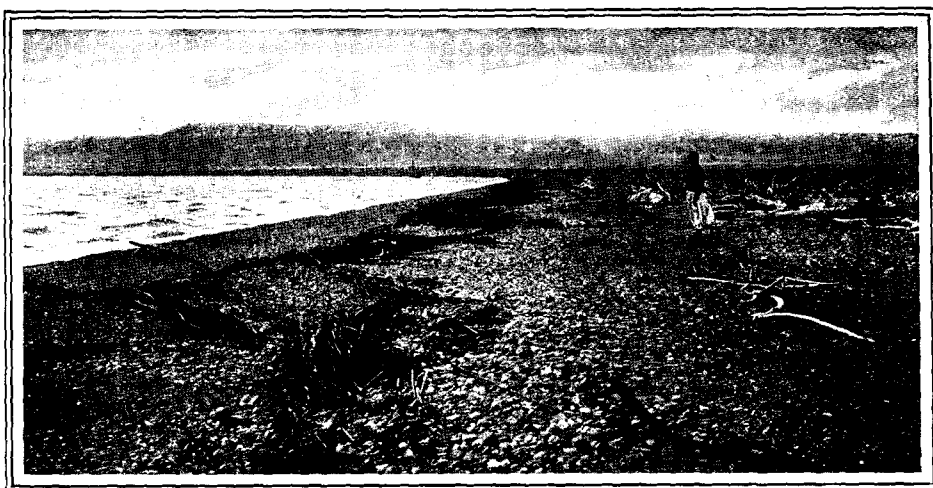
and Chicago before he became a monk, showed us the caves and the somewhat tawdry chapels. Pointing to a picture of St. Saba and a little beast, scarcely larger than a cat, which rubbed its head against the knee of the saint, he told us, with apparent credulity, that the animal was a lion which carried the holy man from his hermit's cave on three different occasions to eat him, but later became miraculously tame, and ever afterward brought the saint his daily supply of food and drink.

On leaving Mar Saba, Ahmed led us across the "wilderness of Tekoa" among rounded hills of yellow limestone, much less rugged than we had expected to find in this region where the plateau of Judea breaks down to the Dead Sea. At length, however, a turn to the east brought us to the head of the gorge of Wadi Kumran, cut in the same hard rock which causes the gorge of Mar Saba. At once the horses began to have difficulty in descending the steep rocky slopes. It was necessary first to coax and then to whip them; and as the gorge deepened we came to a place where it took half an hour to persuade the frightened creatures to scramble down a hundred yards. As we afterward learned, we had followed a goat track on the south side of the wadi instead of crossing to the north. Suddenly, without warning, the valley came to an end, breaking off in a sheer precipice two or three hundred feet high; and we found ourselves looking down upon a narrow plain of gravel, beyond which lay the blue sea. Ahmed dared not turn back apparently, for he did not know the way, and he was evidently afraid of the Arabs of Tekoa, whose black tents we had passed two hours ago. To our amazement he forced the horses to scramble down the precipice. Sometimes the poor beasts actually slid ten or fifteen feet at a time, with clattering, sprawling hoofs which made a noise like a load of rocks being dumped out of a cart. One horse fell over upon its back, so that the top of the saddle was gashed. The loose stones cut the hocks of the patient beasts, and a trail of drops of blood marked the cobblestones and boulders along the path at the base of the cliff. By sunset we were at the level of the plain, twelve hundred feet

below the Mediterranean Sea. The air had been growing steadily warmer all day, and the thermometer now stood at seventy-five degrees Fahrenheit. Again Ahmed lost the way, stupidly crossing a well-worn trail which we afterward found led to Jericho; and we wandered in the darkness through a waste of low tamarisk bushes, and then among thick thorns and dense dusty reeds. Finally we fell into soft muck along the course of a little salt stream, and were compelled to make a long détour before reaching the carriage road which leads from the Dead Sea to Jericho, where we arrived at ten o'clock.

It was well worth while to lose our way both in the mountains and in the plain. By so doing we were made to realize vividly the steepness of the escarpment which marks the location of the geological fault or break between the Ghor and the plateau of Judea. We realized also the denseness and impenetrability of the patches of jungle which grow on the plain of the hot Ghor wherever there is water sufficiently fresh. Thus we were made conscious of the part which the Ghor has played in making the Children of Israel a "peculiar people." Invaders who did not know the country would be in constant danger of falling upon roads like that which we traversed; and a few experiences with such trails would have a strong tendency to make wandering desert tribes refrain from invading Judea. If the Judean plateau, like that of Moab, had been open to the desert, it could scarcely have been the home of a people so separate from the rest of the world, and hence so influential when finally their seclusion came to an end.

Our first two days on the Dead Sea were spent in trying the seaworthiness of our boat, examining the lagoons at the mouth of the Jordan, and becoming acquainted with the sea itself. We had heard much of the bitterness of the water, its greasy, disagreeable qualities, its tendency to corrode metals, and its character of remaining quiet under a wind up to a certain point, and then suddenly rising into irresistible waves. It is scarcely so bad as it is painted. We expected to float half out of water when we bathed and to find swimming difficult. As a matter of fact, one might stay in the water half



NEAR THE MOUTH OF THE JORDAN, LOOKING TOWARD THE MOUNT OF OLIVES

an hour and never discover that it is different from sea-water unless one tasted it or got it into his eyes. In swimming one's shoulders are all the time out of water, and the ease with which it is possible to float is very pleasant. The oddest sensation is when one tries to walk out to his depth and finds that when the water reaches the armpits he is taken off his feet and vainly wiggles his toes in an attempt to touch bottom. If a lagoon is at hand back of the pebbly beach so that one can wash after swimming, a bath in the Dead Sea is quite delightful. One day at the northwest corner, about two miles from the landing-place where visitors usually go, we washed ourselves in a lagoon whose bottom was covered with bitumen. The water felt cool as we stepped in, but, to our surprise, it grew unbearably hot toward the middle because of springs welling up from heated depths along a fissure.

When the water of the Dead Sea dries upon hands or clothing it is intensely disagreeable. After a day or two on the sea everything grows greasy and genuinely "nasty." It is almost impossible to wipe the hands dry, and when they grow dry from evaporation the skin feels stiff, and one wants to hold the fingers apart just as when mud dries on the hands. As to the waves, we did not find them markedly different from those of the ocean in the speed with which they

rise, although they pound heavily when aroused.

On the morning of the third day we started to move our camp to a spring called Ain Feshkah, six miles from the head of the lake on the west side, where a large stream of water, brackish like almost all the water near the Dead Sea, flows from the foot of limestone cliffs into a pretty bay fringed with reeds. As we went along the beach, towing our boat—for that was easier than rowing when we had a load—some salt-gatherers beside a bitter lagoon accosted us to know where we were going. They held up their hands in horror when we said to Ain Feshkah.

"Don't go there to-day," they protested. "Don't you know there is a battle going on there? Didn't you hear the firing this morning? If you go there now, perhaps you will find half a dozen dead bodies lying around. It's the Beni Atrieh. They have come up ten days' journey from the south and are stealing camels and everything else. Don't go to-day. Wait till to-morrow. They will be gone by that time."

We camped a mile farther along the shore. Our men were not eager to go on, and a soldier who came that night with a message from the Mudir at Jericho said that he would not stay at Ain Feshkah for a pound a day, which meant five times his ordinary pay when



THE JORDAN VALLEY SOUTHEAST OF JERICHO

on special duty with foreigners. We went to Ain Feshkah the next day. As we drew near we could see through the field-glass long lines of white sheep winding slowly up the mountainside in orderly files, while black goats were scattered here and there in disorder, although they, too, were, on the whole, moving upward. There were Arabs among them, and we wondered if these could be some of the Beni Atrich driving away stolen flocks. Our man Abdullah thought not, so we cautiously landed and found that the Arabs belonged in the neighborhood. They had come down from the mountains that day to give the flocks a drink, and were now going back to stay a few days until the animals again needed water. They knew nothing of the raid of the day before; for the robbers had gone hastily off to the south.

A few days later, at the northeast corner of the sea, at a place called Suweimeh, our worthless Coptic servant, Shukri, came in with news that some Arabs belonging to the robber tribes of the middle valley of the Jordan had come down from the north and had robbed and stripped some priests at the monastery

of Beth Hogla, close to the road where scores of tourists daily drive to and fro in perfect safety. While he was relating this tale, Mikhail, the cook, came in to say that a report had come that the robbers had stolen the goods of an archaeologically minded priest at Ain Feshkah and left him almost naked. Next we heard that the owner of the café at the bridge over the Jordan had been visited, and was now poorer than formerly. Then faithful Abdullah came in with word that the camel-keeper beside whose black tent we were camped had seen the robbers cross to our side of the Jordan in order to be safe from the law. Fifteen or twenty of them had camped in the dense jungle a mile and a half from us, where I later saw the fresh vestiges of their camp. To complete our discomfort the Arab who was to accompany Mr. Graham to Zoar as guide the next day announced that he was afraid to go; and the local sheikh, who was to bring horses to enable me to study the problem of the location of Sodom, sent word that he intended to keep his horses in the mountains, where they would be safe. We slept with our guns beside us that night; or rather, to

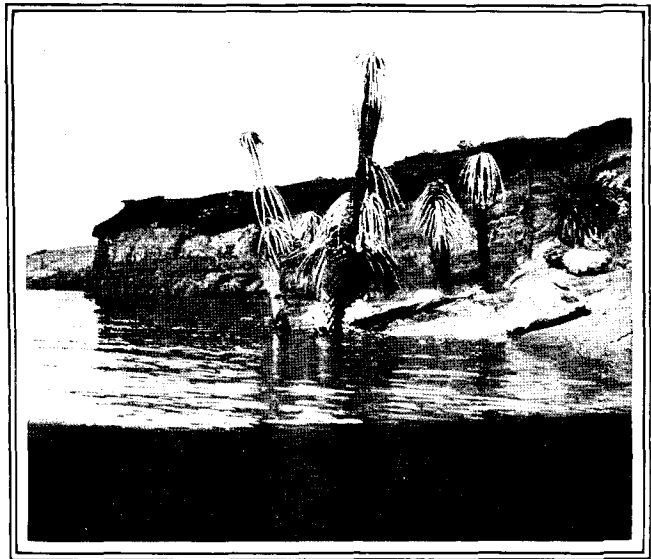


be truthful, we scarcely slept at all till toward morning. It is hard to tell whether the danger was real or imaginary. It certainly seemed real, and the camel-man's little brown dog barked most of the night as if some one were prowling around watching the camp; but nothing happened, and we woke to laugh at our fears. The man with the horses appeared at the appointed time, and we rode mountainward to investigate Sodom and Zoar.

Stories of raids and robberies are the common stock of travellers in Palestine; and one is almost afraid to tell them for fear of being thought to build on a small foundation of fact. Nevertheless it is true that, with the exception of Jericho and the places regularly visited by tourists and pilgrims, the lower portion of the Ghor is chronically in a state of unrest, as it has been for ages, partly because the peculiar physical formation of the country renders it difficult for the government which holds the plateaus on either side to get at the robbers, and partly because the heat and dryness of the region keep the Arabs in deep poverty. At best the Arabs manage to get a scanty living from their flocks and from a few half-tilled fields. A dry spring like that of 1909, when almost no rain fell during March, causes much unrest because the supply of grass for the flocks is scanty, and the Arabs see before them the immediate prospect of lack of the actual necessities of life. At such times, according to the moral code which their environment has fostered, there is no reason why a man should not rob if he sees men of another race or tribe living in plenty while he suffers want.

One of the most enjoyable of our experiences during our two weeks on the Dead Sea was a trip of four days down the eastern coast. Starting from Suweimeh, we rowed along

a shore which is barren to the last degree according to Western ideas, but which impressed us as decidedly green when we first came to it from the still more sterile western shore. Its greenness is due to the fact that on this side the prevailing westerly winds rise, and hence grow cool and give up a little moisture, instead of descending and growing dry as on the western side. In the midst of this shore, a mile or two below Suweimeh, we were much interested to come upon a little promontory of lava, of which more anon. Then came the Wadi Ghuweir, and beyond it a small wadi full of palm trees growing wild. We came upon them unexpectedly, and were thrilled with that strange quickening of the imagination which the first sight of the graceful archaic trunks and rounded heads always produces. Farther south the palms became numerous, growing in graceful clumps wherever a little water oozes out from the horizontally bedded cliffs, or where one of the numerous hot springs wells out to support a green patch of reeds. The steep cliffs, the hanging palms, and the occasional acacia trees give to the landscape an appearance remarkably suggestive of pictures of the mountains of the interior of Morocco on the borders of the Sahara.



PALM TREES KILLED BY THE RISING WATERS

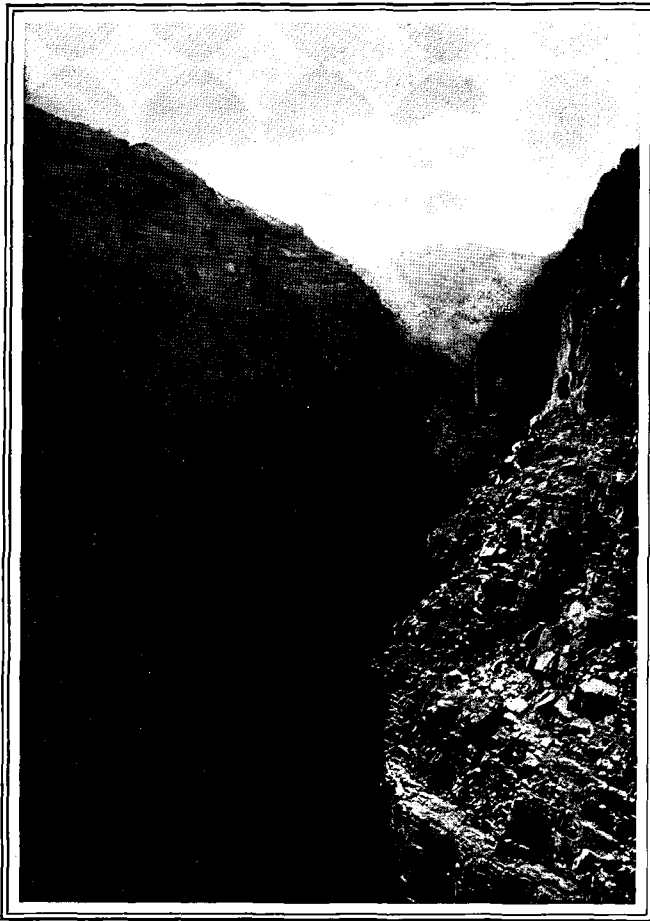
Along the central portions of the east coast lofty cliffs bound the sea, often rising in sheer precipices a hundred feet or more. Once we put up our sail in order to utilize a north wind in passing a bold headland with fine cliffs. The breeze grew to a high wind within a few minutes and changed to the northwest. The waves rose quickly, and we felt obliged to land; but precipices of naked red rock towered steeply for two or three miles ahead. To go back against the wind was impossible. We were obliged to run before it, keeping as far from the shore as possible and watching anxiously for a landing-place as wave after wave broke over our stern. At length a break appeared in the cliffs, a small wadi with a few boulders at its mouth. We jumped out

into heavy breakers, which threw us down and dashed the boat against the rocks so violently as to puncture the canvas bottom. Part of our food was spoiled by the brine, which had come in over the stern to a depth of two or three inches; and our water supply, contained in goat-skin bags, had become nauseatingly brackish because the salt of the sea had penetrated the leather by osmosis while the bags lay in the half-filled boat.

The loss of our provisions obliged us to turn back, but not until we had seen the mouth of the Wadi Mojib or Arnon, the finest place of scenery on the Dead Sea. Splendid red cliffs, banded with yellow and streaked with blue and green, tower out of the many-hued sea, which reflects all the colors of the rocks with

added tints and harmonies of its own. Through the cliffs breaks a gorge scarcely more than a hundred feet wide at the base, and having walls that rise almost straight upward for several hundred feet. Out from the gorge flows a clear stream of fresh water, up which one can sail into the dark recesses of the chasm. Inward a narrow bed of reeds lies in pleasing contrast to grotesquely sculptured cliffs of many warm shades, while outward a frame of solid rock encloses a bit of the bright sea, with the brown, even-topped cliffs of En Gedi and the country of Hebron in the distance.

Among the scientific problems connected with the Dead Sea none is more interesting than that of Sodom and Gomorrah. Hundreds of pages have been written to prove that the story is



THE GORGE OF ZERKA MA'IN



SALT-GATHERERS

a myth, or that the ancient towns were destroyed by the bursting forth of oil wells like those of Texas or Baku, which sometimes are ignited and burn for days. Other hundreds of pages have been devoted to proving that Sodom and Gomorrah were, or were not, at the north end of the Dead Sea, and that they were, or were not, buried under the saline deposits at either end of the lake. Among recent writers there seems to be a tendency to believe that Sodom and its sister town were probably located at the south end of the lake, where the name Usdum is thought to represent Sodom, and where Arab tradition now locates the ill-fated cities. The means of their destruction are believed to have been the oil wells mentioned above. This rather unsatisfactory conclusion has been adopted largely because it has been supposed that no volcano is located in such a position that it could have borne any part in the story.

The identification of Biblical sites was not part of the intended work of the Yale Expedition, but no intelligent man can wander among places whose fame is world-wide without becoming keenly interested in them. According to the story in Genesis, Lot and Abraham were at Bethel, ten miles north of Jerusalem,

when their herdsmen quarrelled and they decided to separate. "And Lot lifted up his eyes, and beheld all the Plain of the Jordan, that it was well watered everywhere, before Jehovah destroyed Sodom and Gomorrah, like the garden of Jehovah, like the land of Egypt, as thou goest unto Zoar. So Lot chose him all the Plain of Jordan." Then the story goes on to the time when "Jehovah rained upon Sodom and upon Gomorrah brimstone and fire from Jehovah out of heaven" while Lot fled to the near town of Zoar. He did not stay there long, but "went out of Zoar and dwelt in the mountain—in a cave."

Having freshly read the story and having looked over the strong arguments for locating the towns south of the Dead Sea and for believing them to have been destroyed by something in the nature of bituminous outbursts, I was taken by surprise when I visited the little ruin of Suweimeh and picked up bits of genuine scoriaceous lava, while the sheikh who acted as guide told the story of Sodom as the story of Suweimeh, or Suweim. The name may be a corruption of Sodom. The place, as we have seen, is much greener than the other side of the Ghor, and in the days of Lot it may



well have been like "the garden of Jehovah"; for in those times, as our studies of old levels of the Dead Sea quite clearly indicate, the climate of Palestine was probably decidedly moister than it now is. I went into the mountains at once from Suweim in order to see where the lava came from. As we climbed the lower hills the sheikh noticed that I picked up black pieces of lava and broke them open. "Don't bother with those," he said. "Up here," pointing southeast, "there is a whole mountain of black rock like that." Not two miles from Suweim, along the line of the great fault which separates the Ghor from the plateau of Moab, we found the mountain, a genuine little volcano of very recent date geologically. From it flowed a sheet of lava which made the small headland already mentioned between Suweim and Ghuweir. The name Ghuweir is believed by many students to be a corruption of Zoar, although it may also be an Arabic word, the diminutive of Ghor, meaning "Little Valley." A late eruption of ashes from the volcano may easily have wrought

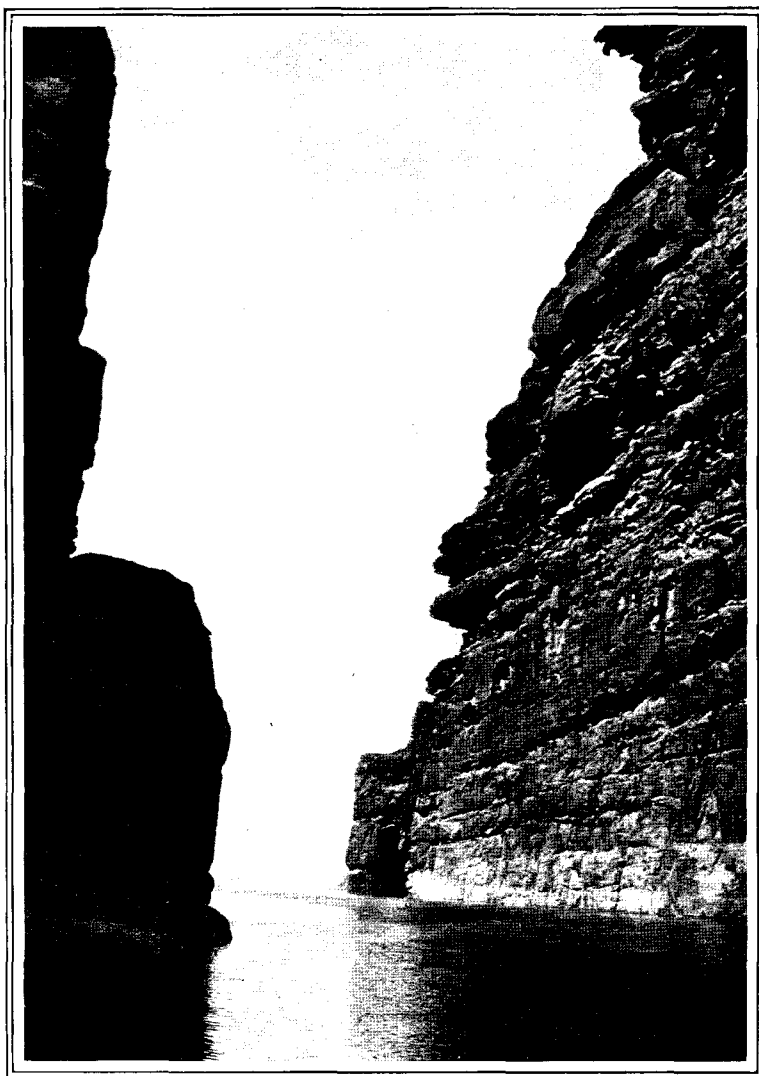
havoc in a town located near Suweim. On the other hand, Ghuweir lies in such a situation that it would be protected by intervening hills.

The present ruins of Ghuweir doubtless date from a time many hundred or even one or two thousand years after the days of Abraham and Lot. There is one work of man, however, which may go back to the period of the Patriarchs and which may have played a part in the Biblical narrative. Near the head of the valley which leads eastward from Ghuweir up toward the plateau of Moab we discovered a carefully excavated cave among the mountains at a place called El Ghutiar, between Abu Hassan and Beth Peor. It is about twenty feet long and fifteen wide, carefully hewed out of the limestone above a spring. Two windows look down the wadi toward Zoar, and a door with a rock-cut trough to lead off the water of rains has been so located that it can be reached only by climbing a precipice by means of six or eight little niches cut in the rock, or by climbing down over some difficult steps in the rock above. Nowhere else in this



THE SHORE OF THE DEAD SEA

North of the Hot Springs of Callirhoe, where baths were built by Herod



MOUTH OF THE ARNON

region is there known to be an artificial cave upon which any such care has been bestowed as upon this. The discovery of the cave, together with the volcano and the tradition of Suweimeh, supplies all the elements of the story of Sodom and Gomorrah in exactly the location where the Biblical account would lead one to expect them. The supposition that the climate of past times was different from that of to-day disposes of the difficulty which has arisen from the Scriptural reference to the fertility of the land. On the whole, the result of a strictly

geographic study of the region tends to show that the Biblical account is correct almost exactly as it stands. The fact that students of the highest ability have been in such doubt as to the location of Sodom and Gomorrah shows how imperfectly the Ghor and the shores of the Dead Sea have been explored.

Few lakes are better known than the Dead Sea so far as the mere name is concerned, but few have played a smaller part in the life of the people around them. To-day, as always, most of the coast of the sea is inaccessible and un-



EAST SHORE OF THE DEAD SEA, NEAR THE BATHS OF HEROD

inhabited. Our investigations show that the lake has been through many changes of size, some of which have taken place within historic times. None of the recent changes, however, have been sufficient to alter its character to any appreciable extent. In all the lapse of history only one important set of stories centres around the Dead Sea—the tales

of Lot; and they have been preserved not so much because of the sea as because of the volcano which overwhelmed the ill-famed towns. The future holds nothing in store for the sea better than the past. The hot, unhealthy coasts may in time be visited for their scenery, or for their associations, but the sea is dead, and out of it no life can come.

## In Fetters

BY EDITH M. THOMAS

MY soul and I were holden fast,  
With cruel fetters on us cast:  
There was no way that we could turn  
Within our dungeon strait and stern.

A ray of light! It showed me, there,  
What lent me hope—and lent despair!  
For, by that ray, Myself I knew  
As prisoner and jailer, too!