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1932

753RD ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, S.W.1, ON MONDAY, FEBRUARY 22ND, 1932,

AT 4.30 P.M.

LIEUT.-COL. HOPE BIDDULPH, D.S.O., IN THE CHAIR.

The Minutes of the last Meeting were read, confirmed, and signed.

The CHAIRMAN then called on Mrs. A. S. D. Maunder, F.R.A.S., to read her paper on "The Shadow returning on the Dial of Ahaz."

*THE SHADOW RETURNING ON THE DIAL OF
AHAZ.*

By ANNIE S. D. MAUNDER, F.R.A.S.

THE laws of nature are determinate in their action; a certain result must follow whether or no we demand the opposite. Therefore it is not possible to explain, or explain away, the return of the shadow through ten steps on the staircase of Ahaz, as due to some rare (therefore misunderstood) natural happening in the heavens, and I will make no attempt to do so. I can only show you the circumstances—astronomical, geographical, and historical, in which the miracle is set.

The shadow had already gone down ten steps and might go down at least ten steps more. The time therefore was early in the afternoon, not later than half-past three if the season was midsummer, nor later than half-past two, if midwinter; the shadow was thrown easterly, stretching towards south of east in the summer months and north of east in the winter, but never further north than E.N.E., nor south than E.S.E. We must look, then, for a terrace of steps in Jerusalem and for an appropriate building which might cast such a shadow. The

building was "the house of thy (Hezekiah's) father"¹ (according to the Septuagint version), but this description might apply to the Royal Palace or to Millo, both south of the Temple area; from both, steps went down to gates in the wall.

"The mountains are round about Jerusalem," so that the city is hidden from every direction except one gap towards the S.E., down which may be seen the wilderness of Tekoa, the Dead Sea, and the mountains of Moab on the distant horizon. Within the city in this direction is a spur with three elevations, on which were successively, from north to south, the Temple itself, the Palace, and Millo the fortress, this last having been strengthened after Jebusite times by David,² by Solomon,³ and by Hezekiah⁴ himself. Millo was originally the highest of the three, but was cut down by the Maccabees (so Josephus⁵ tells us), even to a slope so that the Temple might dominate the whole. *Before* the Temple (to use the Biblical term for the eastern side) was the Mount of Olives, and between the two, but close outside the city wall, was the Kidron Valley, in which was the spring Gihon, and "the conduit of the upper pool in the highway of the fuller's field." Here Ahaz⁶ went to consider the water problem for the city, when threatened by Rezin and Pekah, and was met by Isaiah; here Hezekiah⁷ dealt with the same problem and made his aqueduct beneath the spur, coming out on the west side of the City of David for "why should the kings of Assyria come, and find much water?"⁸; here the envoys of Sennacherib⁹ came to speak treason and sedition to the men on the city wall. In this part of the wall were two gates, the Horse and the Water Gates, and in the time of Joash of Judah we know that steps went down from the Temple to the Horse Gate, and thence up to the King's House, for such was the description at the slaying of Queen Athaliah.¹⁰ Joash himself was killed by his servants "in the house of Millo, which goeth down to Silla,"¹¹ and as *Silla* means "highway," we naturally connect this with "the highway in the fuller's field." We do not know whether this descent from Millo was rather to

¹ Isa. xxxviii, 8 (LXX version).

² 2 Sam. v, 9.

³ 1 Kings ix, 15, 24; xi, 27.

⁴ 2 Chron. xxxii, 5.

⁵ *Antiq.*, XIII, vi, 7; *B.J.*, V, iv, 1.

⁶ Isa. vii, 3.

⁷ 2 Chron. xxxii, 3.

⁸ 2 Chron. xxxii, 4.

⁹ Isa. xxxvi, 11.

¹⁰ 2 Kings xi, 16; 2 Chron. xxiii, 15.

¹¹ 2 Kings xii, 20.

the N.E. to the Horse Gate, or rather to the S.E. to the Water Gate. If we knew at what season of the year Hezekiah took ill, it might help to decide.

Can either of these staircases be connected specially with king Ahaz? There is perhaps a slight balance of evidence in favour of the King's House and the Horse Gate stairway. For after Ahaz had made an altar after the pattern of one at Damascus,¹ and had himself sacrificed on it and brought the brazen altar made by Bezaleel for himself "to inquire by," then he made "the Covert (portico) for the Sabbath that they had built in the house, and the king's entry without, turned he from the House of the Lord for the king of Assyria."² This is as in the Hebrew text, but the Septuagint version runs, "and he made a base for the throne in the House of the Lord, and he turned the king's entrance without in the House of the Lord after the presentment of the king of the Assyrians."³ Whichever rendering is the right one, there seems to be some obscure reference to an alteration of the king's way to the Temple, made by Ahaz because of the king of Assyria.

Already and for a century to come, the king of Assyria was to be for Judah, "King Jareb,"⁴ *the King Adversary*, as Hosea calls him—whether he be Tiglath-Pileser or Shalmaneser, Sargon or Sennacherib or Esarhaddon.

King and priest had distinct offices with the Hebrews. Babylonia was a theocratic nation wherein the king was subordinate to the priest, and every king over Babylon—legitimate, Assyrian or Chaldean—had to "take the hands of Bel" in Babylon once a year on the proper day. Assyria was a military nation; the king was the Commander of the Assyrian army, and the army was the people; from Tiglath-Pileser to Assurbanipal, Assyria was fighting on all sides for world dominion until the nation was bled white. This is an inevitable result almost. Centuries earlier king David (a great general) having been successful in all his wars and having been promised that his heirs would sit on his throne⁵ "for a great while to come," sought to hasten by the sword the coming in of the kingdom of God, so he numbered Israel and Judah for a national army. He was stopped and offered the choice of famine, defeat or

¹ 2 Kings xvi, 10-15.

² 2 Kings xvi, 18 (A.V.).

³ 2 Kings xvi, 18 (LXX).

⁴ Hos. v, 13; x, 6.

⁵ 2 Sam. vii, 19.

pestilence¹—his own country and the countries he fought against would have suffered all three had he carried through his intention.

In Babylon the temples of the gods were the chiefest public buildings; in Assyria the king was supreme and the temple was but a king's chapel attached to the palace. Uzziah, also a warrior king, "was marvellously helped till he was strong."² Then he meant to do like Jeroboam of Israel and Asumirari of Assyria, and went into the Temple "to burn incense upon the altar of incense" and he became a leper till his death. So too did his grandson Ahaz in the year 731, and he did it (if the Septuagint version is correct) "after the presentment of the king of the Assyrians."³

Tiglath-Pileser's first business was to save the priests and king of Babylon from the Arameans on their border. The king, Nabonassar, seems to have been what Jeremiah would call "a quiet prince,"⁴ and was always a faithful vassal of the Assyrian king. On his death in 734 there was an insurrection, the chief rebel being a Chaldean prince, Merodach-baladan, "king of the sea-land," and rather against his will and convenience Tiglath-Pileser "took the hands of Bel" a couple of years before his death in 727. Besides Babylon, he had to guard his north-east border, through Armenia to the desert towards Elam, where, from 733 on, the encroaching Medes began to be felt; he had also to control Syria. Here he conquered Damascus, put Pekah to flight but did not pillage Samaria, and came into contact with Ahaz, whom he met at Damascus, but "he helped him not."⁵ We know little of his successor Shalmaneser except from the Bible; he spoilt the fortress of Beth-Arbel⁶ (probably in Galilee) and besieged Samaria,⁷ where Hoshea, the Assyrian viceroy, had refused him tribute.

It was Sargon who actually took Samaria. Under him the Assyrian empire came into collisions with nations equal in power to its own. The newly immigrated Iranian tribes from Helمند and Kabul and Holy Merv were pressing down south of the Caspian and towards Elam with a vigour that the earlier Median tribes had lost. Into Cilicia (whence Assyria got its metals)

¹ 2 Sam. xxiv, 13; 1 Chron. xxi, 12.

² 2 Chron. xxvi, 15.

³ 2 Kings xvi, 18 (LXX).

⁴ Jer. li, 59.

⁵ 2 Chron. xviii, 21.

⁶ Hos. x, 14.

⁷ 2 Kings xvii, 3-5.

there was an invasion of other Indo-European tribes—the Cimmerians from Gomer, north of the Black Sea—and it was fighting against these that Sargon lost his life in 705. In the west, Egypt—albeit “a broken reed”¹ to any nation that it helped—was come in, remaining an adversary till the Empire’s end. To quote *The Cambridge Ancient History* (vol. iii, p. 46): “The enemies Sargon had to meet arose from four quarters: (1) Union of Chaldea and Elam in the south; (2) medley of peoples in the north and north-east; (3) Phrygia in the north-west; (4) Syria, Palestine and Egypt in the south-west.

Merodach-baladan got the support of all the Chaldean tribes, which united with the Elamites, and also (perhaps later) with the Arabians. In 721 he “took the hands of Bel” at the new year’s festival. In 720 Sargon took the field against him, but the result was uncertain, and it was not until 710 that the great attack was prepared which conquered him. Even then Sargon reinstated him in his principedom of the “sea-land,” and Merodach-baladan seems to have remained his faithful vassal until Sargon’s death. As Sennacherib spent his first two years rebuilding Nineveh, and did not go to Babylon to “take the hands of Bel” until 703, Merodach-baladan was able to make strong his claim and put out the Babylonian appointed as viceroy. In 702 Sennacherib put in another Babylonian, Bel-ibni, and himself went west against Palestine. Next year he came back, for Bel-ibni had joined up with Merodach-baladan; he finally crushed both and made his own son viceroy.

At what time then did Merodach-baladan’s envoys come to Hezekiah to “inquire of him of the wonder that was done in the land?”² Merodach-baladan was “a wretched soldier,”³ but certainly also a first-class intriguer, and no doubt he plotted at all opportune intervals from 733 to 699. He seems to have made Tiglath-Pileser, Sargon, and Hezekiah all do much as he wanted them. Now, Isaiah distinctly says that the envoys came after “those days,”⁴ namely, “the 14th⁵ year of Hezekiah,” when “Sennacherib, king of Assyria, came against all the defenced cities of Judah and took them.” Col. Shortt, however (in his paper of December last), says that this “is an error” on Isaiah’s part.

¹ Isa. xxxvi, 6.

² 2 Chron. xxxii, 31.

³ *Camb. Anc. Hist.*, vol. iii, p. 46.

⁴ Isa. xxxviii, 1.

⁵ Isa. xxxvi, 1.

Isaiah was the recognized historian¹ for (at least) Uzziah's reign, and though he was a prophet, it does not follow, necessarily, that he was vague or inaccurate as to when events took place in which he himself took so active a part. Let us then assume that Isaiah was right in his dating and test this by the other dates that he gives.

In the Book of Isaiah, five points of time are noted :—(1) “ In the year that king Uzziah died ”²; (2) “ In the year that king Ahaz died ”³; (3) “ In the year that Tartan came unto Ashdod (when Sargon, the king of Assyria, sent him), and fought against Ashdod ”⁴; (4) “ and took it ”⁵; (5) “ In the fourteenth year of king Hezekiah, Sennacherib, king of Assyria, came up.”⁶ From Assyrian history we know the dates of (3), (4) and (5) as 714, 712 and 701 respectively. The last date would give Hezekiah's *first* year as 715, and this, therefore, as “ the year that king Ahaz died.”⁷ Ahaz reigned 16 years so that he came to the throne in 731, which is therefore “ the year that king Uzziah died.”⁸ But he was regent at least as early as 735, since in that year the kings of Israel and Damascus conspired to depose him and substitute for him “ the son of Tabeal.”⁹ Probably this meant that the regent Jotham died in 736 or 735. In chapters 7–9 of his book, Isaiah relates this intrigue. Chapters 9–10 form the prologue to a series (chapters 13–30) of “ burdens ” (sometimes translated as “ visions,” sometimes as “ words ” by the Septuagint), concerning certain nations, and these nations are just those enemies from the four quarters that Sargon had to meet ; they are given almost in the very order in which *The Cambridge Ancient History* enumerates them ; especially is the reliance upon Egypt emphasized, and Egypt was not a factor in Tiglath-Pileser's military problems. Also the prologue represents the Assyrian king as saying : “ Is not Calno as Carchemish ? Is not Hamath as Arpad ? Is not Samaria as Damascus ? . . . Shall I not, as I have done unto Samaria and her idols, so do to Jerusalem and her idols ? ”¹⁰ But Carchemish was taken in 717, Hamath was made an Assyrian province in 720, and Samaria was captured in 721. There seems small doubt then that all

¹ 2 Chron. xxvi, 22.

² Isa. vi, 1.

³ Isa. xiv, 28.

⁴ Isa. xx, 1.

⁵ *Ib.*

⁶ Isa. xxxvi, 1.

⁷ Isa. xiv, 28.

⁸ Isa. vi, 1.

⁹ Isa. vii, 6.

¹⁰ Isa. x, 9–10.

the "burdens" were seen subsequent to 717. But the "Burden of Babylon" was seen "in the year that king Ahaz died,"¹ which accords well with the date 715. The reference to the three-year siege (714-712) of Ashdod² comes in between the "Burden of Egypt"³ and the "Burden of the Desert of the Sea."⁴

It seems to me that the evidence is strong that chapters 10-30 of the Book of Isaiah are concerned with Sargon's reign of 721-705; if this is so, there was no confusion on Isaiah's part between Sargon's campaign in Palestine between 715 and 712, and Sennacherib's campaign in 701 and later. It is equally strong that Hezekiah's 14th year was 701. This must also have been the year of his mortal sickness, for 15 years⁵ were added to his life and he reigned for 29 years.⁶ Like Merodach-baladan, Hezekiah probably took advantage of Sennacherib's tarrying at Nineveh to give up paying him the tribute he had rendered to king Sargon. He also finished his great conduit, but there is a suggestion in "the burden of the valley of vision,"⁷ that this was begun in 716 or 715, probably by Ahaz (who 20 years earlier was troubled by the city's exposed water supply),⁸ for the reproach there levelled is one deserved by Ahaz rather than by his son. "Also he strengthened himself and built up all the wall that was broken down, and raised up the towers, and another wall without, and repaired Millo in the City of David."⁹

And then he was stricken to death.

Hezekiah lay in the King's House and looked down the steps which, by the Horse Gate, went up again to the Temple. In the distance, on his right hand, was the Mount of Olives, above which the sun had that morning risen; the sun (now sloping towards the west, for it was about 3 o'clock in the afternoon) had already cast the shadow of his father's house upon the upper steps of the staircase. Then Isaiah brought him the message: "Thou shalt die and not live";¹⁰ and went out into the court between the King's House and the Temple precincts. Hezekiah turned his face to the wall and prayed, and straightway Isaiah was bade return and tell the king that he would recover and go up to the House of the Lord on the third day, and that

¹ Isa. xiv, 28.

² Isa. xx, 1.

³ Isa. xix.

⁴ Isa. xxi.

⁵ Isa. xxxviii, 5.

⁶ 2 Kings xviii, 2.

⁷ Isa. xxii, 9-11.

⁸ Isa. vii, 3.

⁹ 2 Chron. xxxii, 5.

¹⁰ Isa. xxxviii, 1.

God would defend this city.¹ Perhaps Hezekiah looked out to his right to the conduit of the upper pool in the highway of the fuller's field, between the city wall and Mount Olivet, where his father Ahaz—also in imminent danger of invasion—had stood and been offered a sign for safety, a sign either in the depth or in the height,² and had refused it. Now he asked a sign and was also given a choice—between an easy, almost a natural sign, and a hard, nay, a sign out of all nature. Should the shadow go forward ten steps or go back ten steps: as Amos had put it half a century earlier, making “the day dark with night,” or turning back “the shadow of death into the morning.”³

“Faith is the substance of things hoped for, the evidence of things not seen,”⁴ and Hezekiah grasped this substance and chose the hard sign. It was a light thing for the shadow to go down ten steps to the east; every afternoon it happened, and a mere rain cloud over the sun until its setting would extend the shadow to the horizon. But the sun must always go down steadily to the west, and it could not again bathe the steps in sunlight until it rose again next morning over the Mount of Olives. Never did any light appear in the afternoon to the north or south or east that would shine on those steps and drive back the shadow.

Never? Perhaps once. For when king Solomon brought up the Ark of the Covenant of the Lord out of the City of David, which is Zion, and the singers were praising the Lord, and saying “For He is good; for His mercy endureth for ever,”⁵ then the glory of the Lord filled the House. Twice had Isaiah seen this glory in vision: once while Uzziah was still alive: “upon every dwelling place of Mount Zion, and upon her assemblies, a cloud and smoke by day, and the shining of a flaming fire by night: for upon all the glory shall be a defence”;⁶ once again the year king Uzziah died, the Temple was filled with the glory.⁷

The “burdens” of Isaiah give us a review of this great world contest. The origins of the wars are stated and their far-reaching consequences. But these origins are not the desires

¹ Isa. xxxviii, 5-6.

² Isa. vii, 11.

³ Amos v, 8.

⁴ Heb. xi, 1.

⁵ 2 Chron. v, 13 (LXX).

⁶ Isa. iv, 5.

⁷ Isa. vi, 1.

for world dominion, nor for the extension of trade; the theme of the "burdens" is neither strategy nor intrigue, victory or defeat, the supremacy of one nation or the breaking up of another. These are so transitory as scarcely to need mention. The origins were summed up in the words of Hosea: "For the Lord hath a controversy with the inhabitants of the land, because there is no truth, nor mercy, nor knowledge of God in the land. By swearing and lying, and killing, and stealing, and committing adultery, they break out, and blood touches blood."¹ Because of all these when the Lord sends the Assyrian as the rod of his anger,² neither Confederacy, nor Peace Conference, nor League of Nations could avail to stop the war. They could not do it then; they cannot do it now.

Isaiah saw clearly the course of events in several directions. For instance, in the "Burden of Babylon," he saw that God would "stir up the Medes against them which shall not regard silver; and as for gold they shall not delight in it."³ Anyone who has read the *Mihr Yasht* will perceive how apt a description this was of Iranian integrity, and what a power it gave to such a people. Again, immediately after that same "burden," he warns Palestina not to rejoice that "the rod of him that smote thee is broken: for out of the serpent's root shall come forth a cockatrice, and his fruit shall be a fiery flying serpent. . . . thou, whole Palestina, art dissolved: for there shall come from the north a smoke."⁴ This gives the succession of Sargon, Sennacherib and Esarhaddon, and the coming advance of the northern hordes. These may be cases of far-seeing judgment of the characters of men and nations; they may not be prophecy.

But there are other passages which cannot bear this interpretation, for the contrast between the earthly circumstances and the message which the prophet must give is so fierce, that he can only speak with stammering lips. When Ahaz stood at the conduit of the upper pool, and refused a sign, yet a sign was given him that a Virgin should conceive and bear a Son and call him *God-With-U.s.*⁵ This was that Ahaz who burnt his own children in the fire.⁶ In the year that king Uzziah died, Ahaz desecrated the Temple,⁷ yet it was then that Isaiah saw

¹ Hos. iv, 1-2.

² Isa. x, 5.

³ Isa. xiii, 17.

⁴ Isa. xiv, 29, 31.

⁵ Isa. vii, 14.

⁶ 2 Chron. xxviii, 3.

⁷ 2 Kings xvi, 12-15.

the Lord high and lifted up, and the Temple was filled with His glory.¹ When Ephraim saw his sickness and Judah his wound, then Ephraim went to the Assyrian and sent to king Jareb, yet Hosea says of these repentant sinners: "After two days will He revive us; in the third day He will raise up and we shall live in His sight"² and so it came to pass 750 years after this saying.

Two were signs, or rather symbols. Even in his unwillingness Jonah was made a type of our Lord when in the tomb.³ Half a century after Jonah's reluctant preaching to the Ninevites, the sign of Hezekiah's choice was to reveal that not for always was it to be "appointed unto men once to die."⁴ As the prophet Paul said, "We shall not all sleep, but we shall be changed,"⁵ but for the fulfilment of this we still wait.

DISCUSSION.

The CHAIRMAN (Colonel Hope Biddulph) said: The paper to which we have listened evinces a careful study of the Scriptures and of the locality in which the event recorded took place, and, moreover, it presents us with a vivid picture of the times.

I think, however, that some here present, like myself, may feel disappointed that the writer has not attempted to offer an elucidation of the miracle. Though loth to "rush in where angels fear to tread," I venture to offer a suggestion for consideration. Some persons hold a miracle to be something that cannot be explained by natural means, and think that an occurrence ceases to be a miracle if it can be so explained. It is a fact that we are surrounded by many marvels in our daily life, and experience so many indeed, that only events of a unique character or of rare occurrence arrest attention and excite interest. At the same time science is continually discovering processes which have hitherto been inexplicable, and I would suggest that the Creator works by natural laws when what we term supernatural events take place.

The case of the shadow returning ten degrees on the dial of Ahaz seems, on the face of it, to be akin to that of Joshua's Long Day.

¹ Isa. vi, 1.

² Hos. v, 13; vi, 2.

³ Matt. xii, 40.

⁴ Heb. ix, 27.

⁵ 1 Cor. xv, 51.

I am aware that the latter is explained by some in a sense totally different from that usually drawn from the text of the Authorized Version of the Bible, and I do not propose to argue the point. But, as periods of light and darkness are greatly extended in Polar regions, owing to the inclination of the earth's axis to the plane of the ecliptic, it appears reasonable to suppose that some change of this angle may have been effected causing an extension of daylight in Palestine on the occasion of Joshua's Long Day, and in the same manner also the retrogression of the shadow on the staircase of Ahaz.

If it be objected that such a change would be catastrophic, I would point out that Nature has safety valves in her operations which outwit purely scientific reasoning. A striking instance of this is found in the temperature of water, which contracts instead of expanding when heated between 32° and 40° Fahrenheit, a provision which prevents rivers from being frozen solid and killing the fish (see *Transactions*, Victoria Institute, vol. lix, p. 239).

I ask you to accord a hearty vote of thanks to Mrs. Maunder for her interesting and instructive paper. Vote accorded with acclamation.

DR. THIRTLE said: The paper to which we have listened bears on the surface evidence of careful investigation conducted by a lecturer whose name occupies a place of signal honour in the proceedings of the Victoria Institute. Whether the "degrees" on the sundial of Ahaz represent movements on such an instrument as passed for a sundial in subsequent times, or whether they indicate an architectural feature of the king's palace, is a point that is hardly material. Certain it is that, on the day specified in the record, something happened which made a profound impression upon King Hezekiah. More than that, while the incident gave immediate comfort to the king it was noised abroad among peoples in distant lands, for, as we are told, ambassadors came from Babylon to Jerusalem with the express purpose of inquiring as to "the wonder that had been done in the land," and in actual history, as we also learn, the period of fifteen years was added to the king's life. Now, not by way of criticism, but as following upon the lecture, I wish to point out what the record makes clear, that the

king not only enjoyed the blessing of added years, but ordered his after life in the light of a great experience. While suffering from the leprous boil, which disabled him from entering the sanctuary, the king besought delivery with the express purpose that he might "Go up to the house of the Lord," and so join the pious Israelites of his time in divine worship. Being marked for death, however ("Set thy house in order, for thou shalt die and not live"), had for him a deeper meaning. He was an unmarried man, and his death would mean the end of the Davidic dynasty, and what is more, it would involve a tragic violation of the divine purpose, solemnly pledged in Covenant, that the throne of David should never fail of an occupant in succession to a righteous ruler (see 1 Kings ii, 4). It was in these circumstances that the king wept and prayed, and having at length been raised, as it were from death, he exclaimed (Isa. xxxviii, 18, 19): "The grave cannot praise thee, death cannot celebrate thee; the living, the living, he shall praise thee, as I do this day: the father to the children shall make known thy truth."

The king recovered and the Davidic dynasty was prolonged; hence a godly king was not to despair of a successor on the throne. When giving expression to these facts the king made another statement, which should command serious attention; he said: "The Lord is ready to save me; therefore we will sing my songs to the stringed instruments all the days of our life in the house of the Lord." "THE LORD," that is Jehovah: the form of address should be noted by those who would inquire whether the king's pledge was kept. Verily, that pledge was kept, and the result appears in the Psalmody of Israel, in songs to JEHOVAH, sung in "the house of JEHOVAH," fifteen in number, corresponding to the years added to the king's life. Find these songs in the Book of Psalms, Nos. 120 to 134, each of them entitled "A Song of the Degrees." However we may read in our common versions, the title is "A Song of the Degrees," the definite article is plainly there, indicating the association of the songs with the episode of "the degrees" or stairs, as the episode has come before us this afternoon.

Let it be clear that the songs are fifteen in number, no more, no less; the titular form stands between the series, individualizing each and all of the songs. Moreover, the allusion is precise, and should

save us from accepting a loose reference to undefined ascents, steps, or movements, as imagined in pilgrimages, processions or anything else. The word "degrees" in the title *shir-Lammaaloth*, a song or lay, defines a marvellous occurrence in the life of one of the greatest kings of Judah.

Is it said, by way of criticism, that the "Songs" before us have been otherwise explained? The reply is that a mis-explanation cannot be blamed upon the Psalter. Scores of theories of the Psalter and its constituent parts have come and gone, and, at times, as it were by divine illumination, a new light may surprise a patient student. Certain it is that the fifteen songs presume the existence of the temple and its ordered worship, and, therefore, they cannot be exilic as some have contended. Other explanations are equally deficient as it becomes clear on a dispassionate investigation. Apply the test—the man who goes to the Songs with an intimate knowledge of the story of Hezekiah will find in every one of them a response to situations and circumstances belonging to the life of the king who said he would "sing his songs in the house of the Lord," *i.e.* Jehovah, as long as life might last. An important point is found in the fact that the name JEHOVAH dominates the series. It occurs fifty times, and no single song is without the sublime and ineffable name of the God of Israel.

Lieut.-Colonel T. C. SKINNER said: My first impression after a hurried reading of the paper was one of disappointment that the distinguished author had left the astronomical problem unsolved, but more careful perusal disclosed something vastly better. If I read aright, the author's view—most wisely left to suggest itself—is that the turning back of the shadow may have resulted from the appearing of the Glory of the Lord, the Shekinah Glory, in response to Hezekiah's faith. If so, she has brought out for us more than the most satisfying explanation along lines of natural science could ever do, the fact, *viz.*, that God Himself is greater than all His laws as manifested in natural phenomena.

WRITTEN COMMUNICATIONS.

Rev. J. J. B. COLES wrote: Mrs. Maunder's paper on the Sundial of Ahaz is naturally associated in our minds with the valuable

essay on "Joshua's Long Day," by the late Mr. E. W. Maunder, widely known as the author of *The Astronomy of the Bible*.

Both Joshua and Hezekiah were specially favoured servants of God, and Isaiah a leading prophet. The ambassadors from Babylon were greatly impressed by "the wonder wrought in the land" (2 Chron. xxxii, 31). I remember reading that ancient chronologists have asserted that there is a day's difference between astronomical chronology and ordinary reckoning.

Colonel A. G. SHORTT wrote: I see the lecturer differs somewhat from my chronology. I wish I could think that she was right. The fall of Samaria is put in 721, the invasion by Sargon in 714, and that of Sennacherib in 701. So far so good! but in making 714 the *first* year of Hezekiah endless difficulties are raised, for he was certainly reigning in 721, by 2 Kings, xviii, 1, 9, 10; and also the agreement between the chronology of Judah from Hezekiah to Zedekiah with secular history, is destroyed.

The Revised Version is followed in the substitution of "steps" for "degrees," but though the Hebrew word does mean "stairs" there is no certainty that it does so here, or in Ezek. vi, 4, 6, where it is translated "images" or "sun-images." The actual cause of the movement is not touched upon. The late Professor H. H. Turner of the University Observatory in Oxford, suggested to me that it was due to a rare phenomenon, a sun-mirage, when the sun became a *pillar* of light which lasted for a long time after sunset. This appears to me to be a more likely explanation than any I have yet seen.

Miss ETHEL D. JAMES, B.A., wrote: I would like to suggest an explanation that might enable one to conceive a possible method of God's acting. We are told that though we now know only in part, we shall one day have full knowledge. Though our knowledge is still very partial and only such as a finite created being can grasp, yet one or two among us have grasped a little farther than others. The great mathematician Einstein, in showing that even over short distances and short periods light can be proved to bend, suggests that possibly God bent the light rays a trifle differently from the effect produced by the unaided laws and forces of nature,

and thereby produced a transitory and local result. This seems a simpler explanation than any possible slowing down and reversing of the earth's rate of rotation.

Dr. JAMES KNIGHT wrote: Permit me to offer one or two comments on the opening paragraph. This view of laws of nature is antiquated. The new teaching, really a return to Huxley's caution of fifty years ago, declares roundly that natural laws govern nothing, are not obeyed, and do not belong to the nature of things. They are indeed, "but formulæ for the prediction of an observable occurrence," and that the prophets sometimes prophesy falsely is easily seen when we study the method by which a so-called "law of nature" is formulated. Modern physics has accepted Heisenberg's principle of indeterminacy, and J. W. N. Sullivan, commenting upon the application of this, asks, "Are we to interpret the principle as an indication that the law of strict causality does not apply to the fundamental operations of nature? At the present time scientific men are of two minds about this matter" (*Outline of Modern Knowledge*, 1931, p. 111).

In the same way Prof. Wolf, writing on Recent and Contemporary Philosophy, discusses this general Principle of Indeterminacy (or of Uncertainty), "according to which, as some would maintain, there is no such thing in the physical world as that causal determination on which the older scientists insisted, and on which the mechanistic philosophy was based" (*op. cit.*, pp. 590, 591).

In view of these modern pronouncements in the spheres of physical and mental science respectively, it would seem that Mrs. Maunder has been too generous to the materialists, who, of course, are bound to deny, not only this miracle, but all physical miracles.

Mr. G. B. MICHELL wrote: There is only one point that I find to criticize in this most interesting paper, namely, the chronology of the reigns of Ahaz and Hezekiah. The authoress gives "the year that King Ahaz died" as 715 B.C. on the strength of this being Hezekiah's first year, since his "fourteenth" year when Sennacherib came up against him was 701. This is also assumed to be the year of the sickness and recovery of Hezekiah. But, if so, then he died in 686, since 15 years were added to his life.

Now, it is manifestly impossible to fit in (1) the 55 years of Manasseh, (2) the 2 years of Amon, (3) the 31 years of Josiah, (4) the 11 years of Jehoahaz and Jehoiakim, and (5) the 11 years of Jeconiah and Zedekiah—110 years in all—between 686 and 586, the date of the end of the dynasty. Even if we take these last reigns as beginning in the same year as the last of its predecessor, the death of Ahaz *must* have occurred in 721 B.C., not 715.

I quite agree that the "fourteenth" year of Hezekiah *when Sennacherib came up*, must have been 701 or 702. But was this the same "fourteenth" year *when he was sick*? I maintain that it is impossible. For it was *after* the recovery of Hezekiah that Merodach-baladan, *King of Babylon*, sent his ambassadors to Hezekiah (Isa. xxxviii, 1). This could not have been after 701, for Merodach-baladan had been finally conquered by Sennacherib in 704, and deposed and replaced by Bel-ibni in 703. This is no "error on Isaiah's part," for the words "In those days" of xxxviii, 1, cannot refer to the events of chapter xxxvii, for that chapter closes with the death of Sennacherib and the accession of Esar-haddon in 682 B.C., the words immediately preceding "In those days."

In what days then? Evidently, "at that time" of xxxix, 1, to which the following oracles of the rest of the Book refer.

Hezekiah must have had *two* fourteenth years, just as James I of England and VI of Scotland had two fourteenth years, and so he had two *first* years, one in 721, when his father Ahaz died and he became king of *Judah*, and one in 715, the year of Sargon's second plantation in Samaria, when Hezekiah evidently assumed the rule of *all Israel*. There is plenty of evidence that he did this. It was in the fourteenth year of his reign over Judah that he fell sick and the sign under discussion was given. For the whole story concerns Judah alone. But it was in the fourteenth year of his reign over the whole nation that Sennacherib came up against him. For that concerned the whole land. No other theory will fit the historical facts. But this is consistent with all.

The date 708 would suit well the embassy of Merodach-baladan. For although Sargon of Assyria became suzerain of Babylon in 709, he left Merodach-baladan, who had been the native king of Babylon since 730, pretty much to his own devices, of which this embassy

would be a very natural one. Babylon, though it had no military might against Assyria, possessed in the religious supremacy of its Sumerian priesthood a strong and a dangerous prestige which finally destroyed the Assyrian, and as Isaiah foresaw, the Chosen People too.

Mrs. Maunder acknowledges that Ahaz was reigning at least as early as 735, but she makes him "regent" at that time. For this we have no evidence whatever. As Syria was conquered by Pul, and Rezin slain, in 732, a date when the child whose birth was prophesied in Isa. vii, 14, 15, would be only two years old, the events recorded in that chapter as occurring *in the days of Ahaz* must have been in 735.

The learned authoress also says "Ahaz reigned 16 years, so that he came to the throne in 731, which is, therefore, 'the year that king Uzziah died,' " thus eliminating Jotham altogether. But Jotham must have had an independent reign of his own after the death of his father, as well as his long regency for Uzziah. For the language used of his reign in both Kings and Chronicles is explicit, and precisely the same as the terms used of Ahaz, Hezekiah and the other kings,— "And Azariah *slept with his fathers* : and they buried him with his fathers in the city of David : and *Jotham his son reigned in his stead.*" Compare 2 Kings xv, 38 ; xx, 1. The death of Uzziah must, therefore, be placed at least two or three years before 735, say in 739. For in 741 Azariah was still alive, since in that year nineteen districts of Hamath revolted to him. See Schrader's *Cuneiform Inscriptions and the Old Testament*, vol. i, p. 214. And Menahem's tribute to Pul (2 Kings xv, 19) was in 738.

We have, then, for Mrs. Maunder's "five points of time" seven, not five, viz. (1) "In the year that king Uzziah died," say, 739 ; (2) "In the year that King Ahaz died," 721 ; (3) "In the year that Tartan came unto Ashdod," 714 ; (4) "and took it," 712 (711) ; (5) the sickness and recovery of Hezekiah, 708 ; (6) the embassy of Merodach-baladan, say, 707 ; and (7) Sennacherib came up against Jerusalem, 701 (702).

These alterations of dates in no way affect the main argument of this valuable paper, with which I am in cordial accord.

LECTURER'S REPLY.

I would like to emphasize two points about the returning of the shadow : it was local, not something that affected other regions ; it was a large return, and went back over a big extent of ground.

The Chairman has urged two points also. The Creator, he says, works by natural laws. I think each miracle should be considered on its own merits ; I may instance one which was certainly accomplished by natural causes, that of the piling up of the waters of the Red Sea by wind, so that the people walked over dry-shod. But this miracle of the returning shadow I consider to be *the case* in the Old Testament of a miracle which was not in any way due to natural causes, but to the "finger of God" alone. The Chairman's second suggestion that the return was due to a change in slope of the earth's axis comes under his own ban as being "unnatural" and under mine since this must affect the whole world and not Jerusalem only.

In reply to Col. Shortt, the Hebrew word *maalāh* or *maaleh*, or its equivalent in the Septuagint, *anabathmos*, always means "ascent" (steps, degrees, going up, etc.), either physical or ethical. But the "images" (of the Sun) in Ezek. vi, 4, 6, is quite a different word, *chamanim*, "idols" (of Baal). If he turns to Zeph. i, 4, he will see the terms in which the Word of the Lord came concerning the *kemarim*, the idolatrous priests who ministered in the worship of Baal and the host of heaven. Can we suppose that the Lord would use such idols—especially evil, when in the holy precincts of the Temple—as medium for this great miracle of healing ? I knew Professor Turner well, and his keen interest in all accurate observation of astronomical phenomena ; I do not suppose that he ever read this narrative with attention ; had he done so, he would not have suggested a sun-pillar which occurs *after* sunset as the cause of this returning shadow, which *must have taken place in the early afternoon*. Moreover, I put it to Col. Shortt, if this were the cause of the returning sunlight, what meaning could Hezekiah have put on the alternative choice that the shadow should go forward ten degrees ? If the sun was on the horizon or below it, the shadow extended to the horizon ; how could Hezekiah see it go farther ?

With Miss James I agree entirely, that it is possible that God should work a miracle in *any way*. Therefore, I have not tried to explain *how* this miracle was done. I have only brought to memory that there was one previous occasion when the Glory of God so covered the Temple that it would have lit up the ascent to the house of Hezekiah's father. I do not say that this was the means actually employed.

I need not go into Dr. Knight's objection to my "Antiquated view of the laws of nature," except to assure him that "Heisenberg's principle of indeterminacy" does *not* mean that if the Sun on any day is high in the heavens, it is an indeterminate thing, whether the Sun will return to sink in the east region or will continue its course to sunset in the west.

I should like to give my thanks to Dr. Thirtle for his valuable addition to my paper, and especially for his insight into what I wanted to express, but had not the ability to express in any adequate fashion.