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BIBLIOGRAPHY OF CLIMATIC MAPS FOR  
IRAQ

BY  
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This bibliography is sponsored by the Directorate of Climatology  
of the Air Weather Service, U.S. Air Force.

WASHINGTON, D. C.  
May, 1958

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### Introduction

The majority of the sources reviewed contain maps, not for Iraq alone, but for the Near or Middle East. However, maps for some countries, as India, Iran, Israel and Turkey, overlap and include all or parts of Iraq.

Some of the more comprehensive sources are: 2, 3, 9, 17, 24, 36, 37, 42, 46, 47 and 51.

List of library symbols used in this bibliography are:

- DWB - U.S. Weather Bureau Library
- DLC - Library of Congress
- DHO - U.S. Hydrographic Office Library
- NNA - American Geographic Society Library
- MAB - Meteorological Abstracts (American Meteorological Society)

Sources 33 thru 52 have no author listed, but are published by some government or agency.

1. Ashbel, D. Bio-climatic atlas of Israel. Jerusalem, 1950. DWB M82.1/569.4 K0196.  
 . . . Included in this atlas of Israel is a small rainfall map of the Middle East (p. 45) which covers most of Iraq. Isohyets are shown at intervals of 100 mm. (25 and 50 mm. in the drier parts).
2. Ashbel, D. Rainfall map of the Near East. Jerusalem, 1940. NIA (American Geographic Society Library, N.Y., N.Y.)  
 . . . This map, published in black and white on a scale of 1:3,900,000, shows annual rainfall for the Near East, including Iraq.  
 Reviewed in "Geographical Review", Vol. 32, page 674, 1942.  
 See source no. 3.
3. Ashbel, D. Rainfall of Near East. Jerusalem, 1940. Map Division DIC (Library of Congress).  
 . . . Large map (no scale listed) shows annual amount of rainfall in millimeters for the Near East, including Iraq.  
 See source no. 2.
4. Bauer, G. Luftzirkulation und Niederschlagsverhältnisse in Vorderasien. (Air circulation and precipitation conditions in the Near East). Gerlands Beiträge zur Geophysik. 45:381-584. Leipzig, 1935. DWB P B422g.  
 . . . Included at the end of the text are the following small maps:  
 1. monthly, seasonal and annual precipitation.  
 2. monthly and seasonal pressure (mb.).  
 3. streamlines.
5. Benner, C.P. and Gibbons, J.J. Climatology report on Iran, Iraq and Baluchistan. Calif. Institute of Technology Military Climatology. Vol. I, Nov. 1942. DWB M82 C 153 mi.  
 . . . Contains six small seasonal maps (winter and summer) that show:  
 1. mean pressure distribution in mb.  
 2. streamlines.  
 3. precipitation (mm) over a period from 1893-1920, (p. 9-11).

6. Béranger, M. Essais d'étude météorologique du bassin Méditerranéen. (Essay of a meteorological study of the Mediterranean Basin). France. Météorologie Nationale, Memorial, No. 40, Paris, 1955. DWB M(055) F815m #40.

. . . Contains 25 maps of the Mediterranean area including Iraq. Most of the maps depict synoptic situations, however, the following climatic maps are also listed:

1. Mean pressure in Jan. and July, 1901-1930, Fig. 2-3.
2. Principal trajectories of air masses and depressions, Fig. 4-5.

Reviewed in Met. Abstracts and Bibliography. See MAB 8.3-17.

7. Boesch, H.H. El-Iraq. (Iraq of the Arabs). Economic Geography, Vol. 15 No. 4, pp 325-361, 1939, Clark University, Worcester, Mass. (Reprint) DLC D S79 BG. DWB P collection.

. . . A small map (p. 334) shows annual precipitation in mm. for the Near East, including Iraq. Streamlines show prevailing wind direction (summer, solid arrow; winter, broken arrow).

8. Davies, D. Hywel. Observations on land use in Iraq. Economic Geography Vol. 33, No. 2, p. 122-134, Clark University, Worcester, Mass. April, 1957. DWB P collection.

. . . Two small rainfall maps listed on p. 127-128 (fig. 3 & 4) show:

1. Mean annual 200 mm. isohyets for three, two and one year during the four year period, 1936-1939.
2. Reliability of precipitation and southward limit of the rainfall zone over the period 1936-1939.

9. Fish[er] W.B. and Dubertret, L. Moyen Orient Carte des Pluies. (Middle East rainfall map). Beyrout, 1945. Map Division, DLC.

. . . Large map(1:2,000,000) in color, shows annual rainfall (mm.) for the Middle East, including Iraq.

10. Fisher, W.B. The Middle East. A physical, social, and regional geography. London, 1950. DHO DS 49 F56.

. . . Chapter XV (pp 339-370), "The Tigris-Euphrates Lowlands," contains several small maps for Iraq depicting the relation between rainfall, settlement and irrigation. In a folder at the rear of the text is a larger annual rainfall map in inches for the whole Middle East area.

11. Frost, R. Upper air circulation in Iraq and its relation to certain climatological discontinuities. Gt. Brit. M.O. Prof. Notes No. 107, 1953. I.B. M(055) G705p. (Pam Box).  
 . . . A small eastern hemispheric map shows four seasonal mean pressure charts with isopleths of mean vector winds at 200 mb. The axis of the jet stream is also shown.
12. Kellersohn, H. Die Landwirtschaft in Irak. (Agriculture in Iraq). Erkunde, 7(4):276-288, 1953. DWB P collection.  
 . . . Contains a section on climate with rainfall maps, table and diagram of monthly temperatures. A small map, p. 276, shows mean rainfall (Oct.-May) in mm.
13. Kramer, H.P. Bibliography on the climatology of the Middle East and Central Asia. AMS, MAB (Met. Abstracts and Bibliography) Vol. 2, No. 6 June 1951. DWB  
 and
14. Kramer, H.P. Bibliography on the climatology of the Near East. AMS, MAB Vol. 2, No. 5, May 1951. DWB M(016) A512m 2:1951.  
 . . . Both bibliographies list many general sources for Iraq. Sources containing climatic maps were selected to be included with "Climatic Maps for Iraq."
15. Kühle-Scheidemantel, I. Die Dauer der Schneedecke in Europa. (Duration of snow cover in Europe). Petermanns Geographische Mitteilungen 100:186-192, Heft 3, Tafel 32, 1956. DWB P p479m.  
 . . . Plate 32, a colored map (1:10,000,000) shows the duration (days) of snow cover in Europe (including Iraq).
16. Landsberg, H.E. and Biel, E.R. Preliminary climatic atlas of the Mediterranean Region. Publications of the Weather Research Center, U.S.A.A.F. Vol. 4, No. 3. Wash. 1942. DWB MS2 U58p.  
 . . . This atlas and short accompanying text deal mainly with the countries bordering the Mediterranean Sea. However, three cities in Iraq. Babylon, Baghdad and Mosul are included in the following maps:  
 1. seasonal mean pressure (mb.) and wind roses (Jan., Apr., July and Oct.).  
 2. mean monthly precipitation in inches.  
 3. mean number of days with precipitation and thunderstorms per month.

Bibliography of Climatic Maps for Iraq --- U.S. Weather Bureau

Source No. 16 Contd.

4. mean temperature in °F.
5. mean cloudiness in per cent by months.

17. Lembe, H. Eine neue Karte des Jahresniederschlags im westlichen Vorderasien. (A new map of the annual precipitation in the Near East.) Petermanns Geographische Mitteilungen 86:217-225, 1940. DWB P p479m.

. . . Plate 26, shows an annual precipitation map (scale 1:3,700,000, in color) for the Near East including northern Iraq. A small insert map (1:12,500,000) shows the rainfall types.

18. Macfadyen, W.A. Water supplies in Iraq. Iraq Geological Dept. Pub. No. 1, Baghdad, 1938. NMA, DLC.

. . . Contains small rainfall maps of Iraq (p. 4-7) and a climatological discussion with data for 1888-1936.

19. Mazloum, S. La composante annuelle de la pluie en Syrie et au Liban. (The annual component of rain in Syria and Lebanon). Académie des Sciences, Paris, Comptes Rendus, 208:458-460, Feb. 1939. DWB P A166rc.

. . . A small map (Annual distribution of rainfall in Syria and Lebanon) includes most of Iraq. See: MAB 2E-142.

20. Mazloum, S. La composante annuelle de la température en Syrie et au Liban. (The annual component of the temperature in Syria and Lebanon). Académie des Sciences, Paris, Comptes Rendus 208:1921-1924, June 1939. DWB P A168rc.

. . . A small annual temperature map of the Near East includes most of Iraq. See: MAB 2E-143.

21. Mellen, W.P. The climate of Arabia, Iraq and Persia (Iran). Calif. Institute of Technology, Military Climatology, Feb. 1942. DWB M82.1/5 M525c.

- . . . Four small maps for the area show:
1. amount of rainfall (hatched areas) and prevailing winds (streamlines) in summer and winter.
  2. normal surface temperature in Jan. and July.
  3. a relief map.

22. Normand, C. Climate and weather of Iraq. Baghdad, 1919. DWB c7ei N 845.

. . . Contains for Iraq and surrounding area:

Bibliography of Climatic Maps for Iraq --- U.S. Weather Bureau

## Source No. 22 Contd.

1. mean annual rainfall map (inches).
  2. frequencies of wind direction at Babylon (8-pt. wind roses).
  3. various graphs show seasonal wind direction curves at different heights.  
See Quarterly Journal, R.M.S., pp 368-379, Vol. 45, 1919,  
for additional graphs displaying directional frequency curves.
23. Normand, G. Meteorological conditions affecting aviation in Mesopotamia (Iraq). Q.J., R.M.S., Vol. 45 pp 368-379, 1919. DWB M(05) R888q.  
 . . . Contains wind roses (8-pt. scale) showing frequency of wind directions at different heights above ground and based on a summary of two years of pilot balloon observations.
24. Paulhus, J.L.H. Mean annual precipitation in the Tigris River Basin above Baghdad. April 1957. DWB M77.2/567 U587m.  
 . . . Contains a mean annual precipitation map (scale 1:1,000,000) for the Tigris River Basin. Isohyets labeled in 100 mm.
25. Philbrick, ? Mean temperature and precipitation for selected Southwest Asian stations. 1954. Map Division, DLO  
 . . . One large graph showing monthly mean temperature (°F) and precipitation (inches) for Baghdad and six other cities in SW Asia.
26. Ramanathan, K.R. and Ramakrishnan, K.P. The general circulation of the atmosphere over India and its neighbourhood. India Met. Dept. Memoirs, 26(10):189-245. 1939. DWB M(055) I39m.  
 . . . Contains maps of India and adjacent areas (however, only a small section of southern Iraq) showing: mean monthly resultant winds with isotherms for one thru eight km. levels.
27. Schulze, A. Eine Methode zur Erfassung von Jahresgängen mit praktischer Anwendung auf Lufttemperatur und Niederschlagsmenge in Europa. (A method for comprehension of annual variation with practical application of air temperature and precipitation in Europe). Petermanns Geographische Mitteilungen Vol. 100:34-39, Heft 1, Tafel 13 and 14, 1956. DWB P p479m.  
 . . . Contains two maps: mean relative annual variation of precipitation and temperature for Europe (including Iraq) according to Schulze's formulas:  $Z_p = \frac{Z_a}{J} 100$  (precipitation);

Source No. 27 Contd.

$Z_p$  - absolute annual variation index =  $\sum_{j=1}^{12} |A_j|$ , where  $A_j$  is the deviation of monthly precipitation from  $\frac{1}{12}$  of the annual amount  $J$ ;  $Z_T$  -  $\frac{Z_p}{J} \cdot 100$  (temperature);  $Z_a$  - abs. ann. variation index =  $\sum_{j=1}^{12} |A_j|$ , where  $A_j$  is the deviation of monthly temperature from the annual temperature  $J$ .

28. Sutcliffe, R.C. and Bannan, J.K. Seasonal changes in upper air conditions in the Mediterranean-Middle East Area. International Union of Geodesy and Geophysics. Scientific proceedings of the International Association of Meteorology, Rome, Sept. 1954. p 322 London, 1956. DWB M(06) 1611g.
- . . . The upper winds and temperatures are studied for the Middle East area over the period of transition from spring to summer. The date varied over three weeks in the six years 1948-53.
- Small maps on p. 324 show:
1. mean contours of 200 mb. pressure.
  2. isopleths of thickness of 1000-200 mb. layer.
  3. mean vector winds (April and July).
  4. winds at 200 mb. level over Habbaniya (May-June, 1950-1953).
29. Száva-Kováts, J. Klimasystem der Feuchtigkeit. (Climate systems of humidity). Petermanns Geographische Mitteilungen. 86:11-15, 1940. DWB P p479m.
- . . . Plate 2 shows the distribution of humidity over the earth (scale 1:100,000,000); p 12 a small global map with hatched areas for the same element.
30. Wagner, A. Zur Aerologie des indischen Monsuns. (On the aerology of the Indian monsoon). Gerl. Beit. zur Geophysik, Bd 30, Heft 1/2, Leipzig, 1931. DWB M/1460 W132.
- . . . The summer and winter monsoon regimes are discussed on the basis of the 46 upper air stations from Egypt to Burma (5 in Iraq). Four small maps depict the mean wind flow during the NE monsoon at 0.5, 1, 2 and 3 km. levels, while nine small maps show the mean wind flow during the SW monsoon at 0.5 thru 10 km. levels.
31. Weickmann, L. Luftdruck und Winde im Ostlichen Mittelmeergebiet. (Air pressure and wind in the eastern Mediterranean region). Zum Klima der Türkei. Erstes Heft (first part) 114 pp., Munich, 1922. DWB C/ei W416.

Bibliography of Climatic Maps for Iraq --- U.S. Weather Bureau

Source No. 31 Contd.

. . . Contains at the end of Part I (p. 111), maps of the Mediterranean region (including Iraq) based on the period 1878-1913:

- 1. mean pressure and streamlines for Jan., April, July and Oct.
- 2. mean pressure in Feb., Mar., May, June, Aug., Sept., Nov. and Dec.

32. Ziätler, P. Die Temperaturverhältnisse der Türkei. Der Sirocco.  
 (The temperatures in Turkey. The sirocco). Zum Klima der Türkei.  
 Zweites Heft (second part) 181 pp. Leipzig, 1926. DWB C/CI W416.

. . . At the end of part II (p. 181) are listed the following maps of the Mediterranean region, including Iraq:

- 1. mean annual temperature distribution.
- 2. monthly means - Jan., April, July and Oct.
- 3. annual variation of temperature.

PUBLISHED BY THE FOLLOWING AUTHORITIES:

GERMANY. REICHSAMT FÜR WETTERDIENST

33. Flugklimatische Übersicht über Ägypten und den englisch-ägyptischen Sudan (Aero-climatic survey of Egypt and Anglo-Egyptian Sudan).  
 Berlin, 1942. DWB M82 G373f v.6.

. . . Contains 17 maps for the area which include parts of Iraq. Most of the maps are of synoptic conditions and typical storm situations; however, the following climatic maps are listed:

- 1. mean air flow (streamlines) at surface, 1, 3 and 6 km. levels in summer and winter (fig. 9-10).
- 2. predominant situations occurring in each season (fig. 11-16).

34. Flugklimatische Übersicht über Iran. (Aero-climatic survey of Iran).  
 13 pp. Berlin, 1941. DWB M82 G373f v.8.

. . . Contains the following maps which also include most of Iraq:

- 1. mean pressure in summer and winter (2.5 mb. isolines).
- 2. precipitation (mm.) in summer and winter.
- 3. seasonal surface wind roses (Jan., Apr., July, Oct.).

35. Flugklimatische Übersicht der Schwarzmeeresküste. (Aero-climatic survey of the Black Sea area). Berlin, 1941. DWB M82 G373f v.5.

. . . Fig. 1-4 contain four small maps showing mean monthly air pressure distribution (Jan., Feb., July and Aug.) for the

Source No. 35 Contd.

Black Sea area and part of Iraq. (According to W. Gorczynski and L. Weickmann).

36. Flugklimatische Übersicht über die Türkei, den Kaukasus und die nördlichen Teile von Syrien, Irak und Iran. (Survey of aviation climatology of Turkey, the Caucasus and the northern part of Syria, Iraq and Iran). Berlin, 1942. DWB M32 G373f v.3.

. . . Contains the following maps for Iraq:

1. mean seasonal pressure
2. mean seasonal cloudiness
3. mean seasonal precipitation
4. seasonal wind roses
5. annual variation of precipitation amounts

Also included are seven maps (1:10,000,000) depicting typical winter and summer situations.

GERMANY. REICHSLUFTFAHRMINISTERIUM

37. Luftgeographische Beschreibung des Irak. 2 Aufl. (Aero-geographic description of Iraq). Berlin, 1942. DWB M:629.13 G373lb.

. . . Chapter 6 (p. 173-183) discusses the aviation climatology of Iraq and contains the following maps:

1. surface wind roses, winter and summer scale, 1:5,000,000.
2. total cloud coverage, " " " " " "
3. typical summer and winter synoptic conditions, scale 1:10,000,000.

GREAT BRITAIN. ADMIRALTY AND THE WAR OFFICE

38. Notes on climate and other subjects in the Eastern Mediterranean. London, 1917. DWB G/ei G786m.

. . . Contains four maps in a pocket at the end of the volume showing mean isobars (mb.) in Jan, April, July and October for the eastern Mediterranean (including Iraq).

GREAT BRITAIN. METEOROLOGICAL OFFICE.

39. Aviation Meteorological Report on West Persia, No. 33. 1946. DWB M32 G786

. . . Contains the following maps for Iraq:

1. average monthly rainfall (inches) for Jan., April and Oct., page 4.

Bibliography of Climatic Maps for Iraq --- U.S. Weather Bureau

Source No. 39 Contd.

2. mean vector winds at 3,000 and 10,000 ft.
3. mean pressure (mb.) at 10,000 for Jan. and July.

40. Conditions along airship routes: Preliminary report on routes between England, Egypt and India. Airship Met. Report 72(Jan) and 80(Sept) 1931. DWB No. 6765m No. 72.

. . . Contains climatic maps including Iraq for Jan., (Report 72) and Sept (no. 80):

1. mean pressure distribution at msl for a period of years.
2. wind roses and gale frequencies.
3. wind roses at 1500, 3000 and 6000 ft. levels.
4. mean surface temperature over land.
5. highest and lowest recorded surface temperatures.
6. mean sea surface temperature.
7. isopleths of mean air density at msl.
8. average monthly rainfall.
9. mean number of days with thunder per month.

41. Upper air data for stations maintained by the Meteorological Office. Summaries of radio-sonde observation of temperature and humidity and of radar wind measurements at standard pressure levels, 1946-50, Part 3. Habbaniya, Iraq. London, 1953. DWB No. 6786a. Pt. 3.

. . . Contains monthly upper air wind roses at standard pressure levels (surface - 100 mb.) for Habbaniya, Iraq.

INDIA. METEOROLOGICAL DEPARTMENT

42. Climatic charts of India and neighborhood for meteorologists and airmen. Poona, 1942. DWB No. 6754 I39c.

. . . Contains maps of India and adjacent areas (including Iraq) with:

1. annual maps.
  - a. mean isohyets.
  - b. normal dates of onset and withdrawal of the SW monsoon.
2. monthly (12 maps for each month).
  - a. mean isobars and prevailing surface winds.
  - b. normal isohyets and mean tracks of storms and depressions.
  - c. number of days (by hatched areas) for: (1) thunder, (2) dust-storms, (3) fog, (4) low cloud amount, 7-10 tenths (a.m. and p.m.)
  - i. streamlines and isolines at 1-3 km. levels.

Bibliography of Climatic Maps for Iraq --- U.S. Weather Bureau

Source No. 42 Contd.

3. Seasonal maps for sea areas.

43. Climatological charts of the Monsoon area. 1948. DWB M82.3/54 I39cl.

. . . Contains maps of the Eastern Hemisphere (including Iraq) for:

1. monthly surface wind roses and mean monthly isobars.
2. upper wind roses and streamlines at 0.5, 1, 2 and 3 kms.
3. monthly cyclone tracks.
4. monthly rainfall amounts (inches) by hatched areas.

44. Meteorology for airmen in India. Part I. Bombay, 1949. DWS M82.1/54 I39m.

. . . Although this text deals mainly with India, the maps extend out over a larger area and cover part of Iraq. The maps listed are:

1. surface air currents-Northeast and Southwest monsoons, p.1.
2. mean wind directions and pressure at 8 a.m. in Jan., April, July and Oct., p.4.
3. mean annual rainfall map.
4. upper wind frequencies and streamlines at 1 and 3 km. for Jan., April, July and Oct., p.22.

45. Upper Wind Roses. Supplement to "Climatic charts of India and neighbourhood for meteorologists and airmen." Poona. 1943. DWB M82.3/54 I39c.

. . . Included with Eastern Hemisphere maps (scale, 1:20,000,000) are wind roses for selected stations in Iraq at heights of 0.5, 1, 2, 3, 4, and 6 km.

IRAQ. METEOROLOGICAL SERVICE.

46. Climatic charts. Baghdad, 1954. DWB M82.3/567 I65c.

. . . These charts appear to be a supplement to the "Climatological Atlas for Iraq," 1945. See source no. 47.

Contains 40 climatic charts on a scale of 1:5,000,000 for the following elements:

1. monthly mean relative humidity (Jan.-Dec., 4% increments).
2. mean daily pressure in millibars at M.S.L. (Jan.-Dec.).
3. mean daily temperature  $\left(\frac{\text{max.} + \text{min.}}{2}\right)^{\circ}\text{F}$ , May-Dec. only.

Bibliography of Climatic Maps for Iraq --- U.S. Weather Bureau

Source No. 46 Contd.

4. mean daily maximum temperature, May-Dec. (see source no. 47 for a complete set - Jan.-Dec.).

47. Climatological atlas for Iraq. Pub. no. 8. Baghdad, 1945.  
DWB M82.2/56.7 I65p v.8.

. . . This atlas contains ninety monthly maps (1:5,000,000) including:

1. mean pressure at 02, 06 and 13 GMT in MB at M.S.L.
2. mean daily maximum and minimum temperatures.
3. mean daily vapor pressure (mb.).
4. mean isohyets (mm.)
5. seasonal rainfall in mm.
6. duration of daylight.
7. tracks of depressions.
8. frequency of surface wind from specified directions at Baghdad (April 1937-Mar. 1944) and Basra.
9. mean vector wind at Baghdad airport (1937-1941) are graphically presented.

See. source no. 46.

48. Rainfall in Iraq 1936-1939. Occasional Pub. No. 3. Baghdad, 1940.  
DWB M(055) I65o no.3.

. . . Contains four charts (scale 1:5,000,000) showing annual distribution of rainfall for each year (1936-1939). The isohyets are drawn in green and are numbered in mm. The height of the ground above sea level is indicated by a scale of brown tints.

ISRAEL METEOROLOGICAL SERVICE

49. Atlas of Israel. Climatic Division. 1958. DWB M82.3/569.4 I86at (oversize).

. . . Five loose pages (oversize) contain precipitation charts for Israel. On page 1/IV three temperature maps - max., min. and mean - are presented for the eastern Mediterranean area (including Iraq and part of Iran) on a scale of 1:17,500,000.

U.S. HYDROGRAPHIC OFFICE.

50. Strategic Aerological Surveys. Part. I. H.O. No. 222 (See survey #21, Iraq, Wrn. Iran, Syria and Transjordan) Wash., 1943.  
DWB M82/26 U585 pt. I.

Bibliography of Climatic Maps for Iraq --- U.S. Weather Bureau

Source No. 50 Contd.

. . . Survey no. 21 contains a short discussion of the climate of Iraq. Although no maps are listed, mean monthly data are presented graphically for four stations - Mosul, Baghdad, Babylon and Basra.

U.S. WEATHER BUREAU

51. Climate of Southwestern Asia. P.R. no. 1. 1943. DWB M82 U587p.

- . . . Contains the following maps for Iraq:
1. storm tracks in winter.
  2. seasonal wind flow chart in summer and winter.
  3. pressure distribution, prevailing winds, air mass character and fronts (summer and winter).
  4. seasonal surface wind roses.
  5. monthly mean cloudiness (%).
  6. seasonal mean frequency of low cloud.
  7. monthly mean temperatures.
  8. mean relative humidity at Mosul.
  9. southern limits of sub-tropical winter rainfall.
  10. monthly mean precipitation (inches and days).
  11. monthly mean frequency of thunderstorms.
  12. southern limits of snowfall.
  13. wind roses, surface and upper air.

WORLD METEOROLOGICAL ORGANIZATION

52. World distribution of thunderstorm days. Part 2. Tables of Marine and World Maps. WMO, No. 21. TP 21. Geneva, 1956. DWB M(06) W927p.

. . . This publication, pt. 2, contains maps showing the number of thunderstorm days - monthly, seasonally and annually - for the whole world.

SUPPLEMENT

53. Knoch, K. and Schulze, A. Niederschlag, Temperatur und Schwüle in Afrika. (Precipitation, temperature and sultriness in Africa). Hamburg, 1956. DWB oversize M82.3/6 K72n.

. . . Contains large maps of the African continent and surrounding area (including Iraq) on a scale of 1:20,000,000, for the following:

1. mean actual temperature (Jan. and July) tinted colors with red isotherms for every 2°C.
2. mean annual range of temperature (Jan. and July).
3. mean annual precipitation, tinted colors with red isolyets in mm.

Bibliography of Climatic Maps for Iraq --- U.S. Weather Bureau

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Ashbel, D.	1, 2, 3
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Subject Classification Alphabetical

ATMOSPHERIC FORMATIONS AND DISTURBANCES.

- (a) Trajectories of air masses, depressions: 6, 42, 43, 47, 51
- (b) Typical situations: 33, 36, 37
  
- CLOUDS. 16, 36, 37, 42, 51
  
- DUST. 42
  
- FOG. 42
  
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