Desert Locust Bulletins for 1986

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AGP Division

Locusts, other migratory pests and emergency operations group

DESERT LOCUST SITUATION SUMMARY AND FORECAST

NO 89   JANUARY 1986 - EARLY FEBRUARY 1986

SUMMARY

Gregarious breeding was in progress in western Saudi Arabia and along the Red Sea coasts of Sudan and Egypt. Control was completed in Saudi Arabia in early February but was continuing in Sudan and Egypt. Some escapes could occur which could reach eastern Arabia and even southern Iran, Pakistan and Afghanistan during late March or April. Adults persist in south-west Mauritania and there were groups of adults and isolated hoppers in north-east Mali.

W/R8461

DESERT LOCUST SITUATION, JANUARY - EARLY FEBRUARY 1986

WEST AFRICA

Meteorology

The Intertropical Front (FIT) was practically stationary over the Gulf of Guinea. Meteosat infra-red imagery showed that it was most active opposite Cameroon and Gabon and over the ocean off Liberia. Satellite imagery also showed some Atlantic disturbances crossing the western Sahel and Sahara. One, on 2 February gave 7mm of rain at Nouakchott and 2mm at Dakar on 3 February, but extended to Libya (see North-West Africa).

The Harmattan was dry and relatively warm as a result of the presence of multiple ridges of high pressure extending from the Azores anticyclone as far as Sudan. Numerous sandstorms were detected by Meteosat and reported by the GTS.

Maximum temperatures were usually between 30° and 35°C in the interior but 20°-25°C in coastal areas.

Breeding conditions

Substantial areas of green vegetation, which would persist until March according to nomads, were present in the following areas in Mauritania: south-eastern Adrar, Adafers, Tichit, Chinquitti, Makteir, north of Akjoujt, between Tichit, Nijeran and Bouderga.

In Mali there were patches of well developed Schouwia, Morettia, Heliotropium and Pulicaria in northern Adrar and southern Timetrine.

In Niger Schouwia remained green in certain stations in Air and Tamesna.

Locusts

MAURITANIA

Immature and mature adults were seen in the valley of the Senegal river, but no swarms were sighted.

MALI

Immature adults at densities of 25-2500 per hectare and isolated green fourth instar hoppers were found over areas of 150-250 hectares in the following areas in northern Adrar: Tin Orhi (2034N/0047E), Amamach (2019N/0059E), Ikadawaten (2044N/0048E) and Edjeden (2100N/0113E) and in the following areas in southern Timetrine:. Adjora (1857N/0045W), Alachag (1842N/0054W), In Emendjet (1845N/0041W) and Tourza (1842N/0037W).

No locusts were reported from NIGER.

NORTH-WEST AFRICA

Meteorology

During the first half of January ridges from the Azores anticyclone greatly weakened cold fronts from the Atlantic which crossed the Maghreb from west to east. During the second half of January waves formed on cold fronts giving rise to heavier and more frequent rain mainly north of 30°N, although daily totals were generally less than 10mm. Some sandstorms were associated with secondary depressions which developed at about 30°N particularly over Libya. One cold front which extended from Senegal to Libya gave rise to sandstorms over Libya on 31 January when winds exceeded 75 kilometres per hour and resulted in 36mm of rain at In Amenas on 2 February.

Maximum temperatures were generally 20°-25°C in warm sectors but were sometimes less than 15°C behind cold fronts.

Breeding conditions

It will have been too cold for breeding, except in southern Algeria.

Locusts

MOROCCO was reported clear in December. No reports were received from ALGERIA, LIBYA or TUNISIA.

EASTERN AFRICA

Meteorology

Mediterranean depressions affected coastal areas of Sudan probably by complex interactions with the Red Sea Convergence Zone which was situated at about 20°N. This may explain 27mm of rain at Port Sudan on 1 January and a further 6mm on 5 January.

Breeding conditions

According to a report from Sudan dated 28 January breeding conditions were stated to be excellent in Red Sea coastal areas and had certainly been favourable in December, contrary to what was reported in Summary No. 88.

The northern coastal plains of Somalia were reported to be dry.

Locusts

SUDAN

On 11 January a 10 square kilometre mature swarm settled at Khore Gwob (1900N/3724E) and another mature swarm measuring 15 square kilometres was reported in the same area on 12 January. Egg-laying was observed. On 14 January a mature swarm measuring 1 square kilometre was reported around Khore Hoshiry (1924N/3716E). Although these were the first reports of Desert Locusts from Sudan since October it is evident from the following reports that successful breeding had been in progress since early December:

- Tokar Delta,groups of Desert Locust hoppers and adults.
- Khore Sitrab (1837N/3730E), groups of adults at 8400 per hectare over an area of 400 hectares; also groups of first to fourth instar hoppers at densities of 40-60 per square metre.
- Khore Ashat (1843N/3726E), groups of adults at 3480 per hectare over an area of 700 hectares; also groups of first, second and fourth instar hoppers at densities of 35-40 per square metre.
- Khore Weirim (1847N/3727E), groups of adults at 2700 per hectare over an area of 100 hectares; also first and second instar hoppers at densities of 8 per square metre.
- Khores Tobein (1909N/3720E) and Handub (1913N/3717E), groups of adults at 4800 per hectare over an area of 2400 hectares; also groups of third to fifth instar hoppers.
- Khore Hambokeib (1918N/3717E),groups of adults at 5400 per hectare over an area of 180 hectares, also isolated second to fourth instar hoppers.
- Khore Hoshiry (1924N/3716E), groups of adults at 8400 per hectare over an area of 60 hectares, also isolated third to fifth instar hoppers.
- Khore Arbaat (1949N/3705E), groups of adults at 18000 per hectare over an area of 80 hectares also isolated third to fifth instar hoppers.

Further hatching was reported from the Suakin area in early February.

Aerial and ground control operations were in progress.

Other countries in the Region were reported clear.

NEAR EAST

Meteorology

During the first half of January, ridges extending from central Asia gave generally dry weather over the Arabian peninsula although a cold front gave heavy rain from Tebuk to Medina on 2-3 January. By contrast, at the end of the month and in particular from 26 to 28 January Mediterranean disturbances were reactivated during their eastward progression towards Iran. However, according to GTS data daily rainfall totals did not exceed 6mm. From 1 February a new reactivation around the Gulf resulted in scattered rainfall in north-eastern Arabia but heavier amounts in UAE and Oman. Abu Dhabi received 11mm, Ras Al Khaimah 12mm, Buraimi 19mm and Seeb 38mm on 1 February and Thumrait 18mm and Seeb 41mm on 2 February.

On 5 February a further disturbance brought dense sandstorms to northern Arabia, but according to GTS data daily rainfall totals did not exceed 3mm during its eastward passage on 6-9 February.

Daily maximum temperatures were generally between 25°and 30°C in southern areas but in the northern and central areas they were generally between 15°and 25°C depending on the origin of the air mass.

Breeding conditions

Conditions became unfavourable for breeding along the southern Tihama of Saudi Arabia during January due to lack of rain. On the other hand they were reported to be very favourable in the South-Eastern Desert of Egypt.

Locusts

KINGDOM OF SAUDI ARABIA

As reported in Summary No. 88 the total area infested on the Lith and Qunfidah Tihamas was some 2500 square kilometres in early January . There were numerous late instar hoppers and fledglings, the main concentrations being south-east of Lith to the east of Wadi Ayyar where there were infestations over an area of 60-70 kilometres by 20-30 kilometres, and north-east of Mudhailif between Wadis Nawwan and Doga in an area of approximately 40-50 kilometres by 15-20 kilometres. Further infestations were present in the foothills where difficult terrain impeded control.

On 13 January three swarmlets were completely controlled south-east of Lith and a further 200 large hopper bands were controlled between Lith and Hali.

By the end of January the infested area was estimated at 3000 square kilometres and a further 100 hopper bands had been controlled. Solitarious adults at densities of up to 400 per hectare were present as far north as Medina.

Control operations terminated on the Lith-Qunfidah Tihamas in early February, when adults were again reported as far north as Medina, but no hoppers had been reported north of Lith.

EGYPT

A cable dated 29 January reported that ground control operations commenced on 27 January against first to third instar hopper bands in Wadi Di-ib (22N/35E) along the border with Sudan. Scattered solitary adults were reported copulating in the same area.

IRAQ was reported clear in December.

There were no other reports from the Region.

SOUTH-WEST ASIA

Meteorology

In general north-easterly winds covered the winter-spring breeding areas due to the quasi-permanent high pressure over Central Asia. When this temporarily weakened, westerly disturbances reached Baluchistan and Afghanistan. Nushki reported light rain on 13 January, while Nushki and Kharan received widespread heavy rain on 21 January, Quetta, Panjgur and Turbat received moderate rain on 20-21 January and there was light rain at Pasni on 21 January.

In early February another westerly disturbance traversed Afghanistan and Pakistan, giving 12mm of rain at Bust, 31mm at Quetta and 34mm at Jiwani.

Maximum daily temperatures were generally between 20°and 25° in Baluchistan.

Breeding conditions

It was too cold and dry for breeding.

Locusts

INDIA

According to a late report scattered adults were reported from three localities of Jaisalmer district in the first half of December, the maximum density being 225 per square kilometre at Askandra on 14 December. No locusts were seen in the latter half of December or during January.

PAKISTAN was reported clear during the second fortnight of January, AFGHANISTAN during December and IRAN during October.

FORECAST FOR MARCH - APRIL 1986

Although not reported earlier, it is now clear that the seasonal upsurge in the Central Region involved the African as well as the Arabian side of the Red Sea. Ground control operations have been completed in Saudi Arabia, but aerial and ground control is in progress in Sudan and ground control in Egypt. These control operations should prevent the formation of significant swarms but some escapes may occur. In Arabia these are likely to move northwards and into the interior. In Sudan they are also likely to move north and may cross the Red Sea to north-west Saudi Arabia. The situation in northern Ethiopia is unknown. The situation in the OCLALAV region is reported to be calm but there are probably still considerable numbers of scattered adults in western Mauritania, some of which could move north and start to breed in western Sahara and adjacent areas of Mauritania. Small scale breeding may occur in Baluchistan of Pakistan. Elsewhere the situation will remain calm.

In West Africa considerable numbers of scattered adults will persist in western Mauritania. Some may move north during periods of warm southerly winds and start to breed in southern parts of the western Sahara and adjacent areas of Mauritania. Small numbers of adults will persist in areas of green vegetation in Mali and Niger.

In North-West Africa there may be low density breeding in a few localities in the Algerian Sahara.

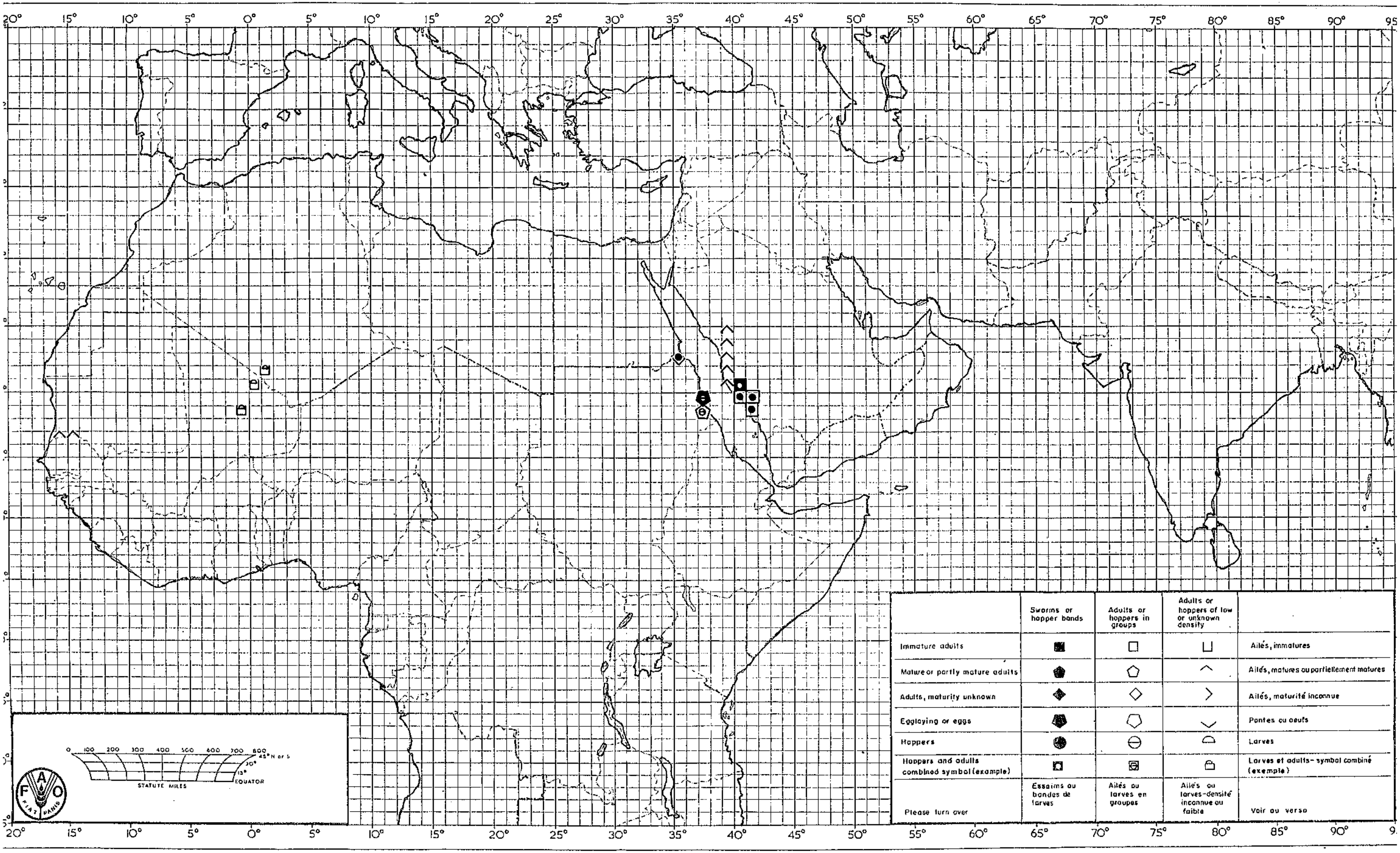
In Eastern Africa increasingly gregarious breeding will continue on the Red Sea coastal plains of Sudan and will probably spread further north. As the infestations become more gregarious they will present better targets for control operations but some escapes may occur. These are likely to move inland towards the end of the forecast period. The situation on the Red Sea coast of Ethiopia is unknown; substantial populations could be breeding and the possibility of swarm production cannot be ruled out. The situation will remain calm in northern Somalia.

In the Near East breeding is likely to occur in many areas along the northern Tihama and in western interior areas of Saudi Arabia and could result in the formation of some groups. Gregarious breeding will continue in the South-Eastern Desert of Egypt and may become more widespread. Scattered adults could reach Eastern Arabia including the United Arab Emirates and Oman in the latter part of the forecast period.

In South-West Asia small scale breeding is likely to occur in Baluchistan of Pakistan. Scattered adults may reach southern Iran, Pakistan and, possibly, Afghanistan during the latter part of the forecast period.

Rome
13 February 1986

Desert Locust Situation Summary No. 89 JANUARY-EARLY FEBRUARY/JANVIER DEBUT FEVRIER 1986



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DESERT LOCUST SITUATION SUMMARY AND FORECAST

NO. 90 FEBRUARY - EARLY MARCH 1986

SUMMARY

Patchy gregarious breeding was in progress in western Saudi Arabia and along the Red Sea coast of Sudan. Control was completed south of Jeddah in February but was continuing north of Jeddah, and in Sudan and Egypt. Any escapes are likely to move towards the interior of Sudan. Small numbers of adults will persist in Mauritania, Mali and Niger and low density breeding will occur in Baluchistan of Pakistan.

W/R 9119

DESERT LOCUST SITUATION, FEBRUARY - EARLY MARCH 1986

WEST AFRICA

Meteorology

The Intertropical Front (FIT) progressed slowly and very irregularly towards 10°N. Several localised northward pulls were associated with mid-latitude disturbances. The evolution of disturbances of this type could be followed using Meteosat infra-red imagery. One such was very well developed on 18 March, with a very large disturbance extending from Burkina Faso and Mali to Libya which gave up to 100 mm of rain in 24 hours. During another disturbance, thermoconvective activity extended north of 10°N; Sikasso recording 137 mm on 28 February. Several strong sandstorms were recorded during the period, particularly in Mauritania.

Maximum temperatures were generally in the range 30-37°C in interior areas and 20-27°C in coastal areas.

Breeding conditions

No rain was reported from the breeding areas but green vegetation persisted in Maktair, El Mreyye, Adafer and Aouker of Tichit in Mauritania, and around In Abangharit in Niger.

Locusts

No locusts were reported and no surveys were undertaken.

NORTH-WEST AFRICA

Meteorology

As mentioned under West Africa, numerous depressions and disturbances of Atlantic origin crossed the region from west to east giving heavy rain preceded by sand storms. Among daily totals reported by the GTS were 26 mm at Agadir on 3 February, 11 mm at Bechar on 7 February, 21 mm at In Amenas on 9 February, 44 mm at Agadir on 28 February, 7 mm, 16 mm, 17 mm and 23 mm at Djelfa, El Golea, Timimoun and Ghardaia on 5 March. Meteosat IR imagery indicated there was rain further south but GTS station totals are not available. Maximum daily temperatures were generally in the range 25-30°C in the Sahara while in coastal regions they ranged from 25°C in warm sectors to 15°C with the arrival of cold fronts.

Breeding conditions

No information is available but conditions will have become suitable for breeding in the Sahara.

Locusts

No locusts were reported.

EASTERN AFRICA

Meteorology

Due to the eastward moving mid-latitude depressions the position of the Red Sea Convergence Zone was very variable, ranging from 15° to 25°N. February was dry along the Red Sea coast of Sudan but a further 26 mm fell at Port Sudan on 6 March. No rain was reported from the northern coastal plains of Somalia. The permanent low pressure (1005 millibars) over Sudan and Uganda resulted in warm dry north-easterly winds over northern Sudan, whilst instability over Tanzania, Kenya and Uganda propagated itself slowly northwards to the Ethiopian highlands. Diredawa received 23 mm on 19 February.

Maximum daily temperatures reached 40°C in Sudan but were no more than 25°C in the Ethiopian highlands.

Breeding conditions

On the Red Sea coast of Sudan breeding conditions were favourable south and north of Port Sudan (which has received 186 mm since October, compared with the long-term average of 100 mm) during February. By mid-March vegetation on the plains south of Port Sudan to Karora was drying out, but was still green in Khors. North of Port Sudan the vegetation was also green in Khors.

There was no information from Ethiopia, Djibouti or Somalia.

Locusts

SUDAN

Infestations of all stages were present throughout the period on the Red Sea coastal plain of Sudan. During February there were small and medium sized hopper bands of all instars and fledglings in the Port Sudan-Tokar sector which were being controlled by ground teams and one aircraft from DLCO-EA. A total of 1000 litres of Diazinon, 800 litres of Fenitrothion and 400 litres of Dieldrin were applied.

On 24 February a ground survey revealed the presence of mature adults and egg-fields north of Port Sudan.

During early March aerial and ground control continued and by the middle of the month only pockets of adults and hoppers were present, between Tokar and Mohamed Gol.

In the northern sector mature adults and egg-fields were present west of Halaib in early March.

(There were also widespread populations of the African Migratory Locust on the Red Sea coastal plains north and south of Port Sudan, and reports of adults from Equatoria Province, where breeding had been in progress since November).

ETHIOPIA

There were unconfirmed reports of 'large numbers of locusts' on the Eritrean coastal plains in February and early March.

There were no other reports from the Region.

NEAR EAST

Meteorology

As reported in Summary No. 89 and earlier in this Summary, numerous eastward moving Mediterranean depressions of Atlantic origin were reactivated as they crossed the northern Red Sea before moving to Eastern Arabia. One depression gave the following rain: 11 mm at Abu Dhabi, 12 mm at Ras al Khaimah, 19 mm at Buraimi and 38 mm at Seeb on 1 February and 18 mm at Thumrait and 41 mm at Seeb on 2 February. From 5 to 9 February there were strong sandstorms associated with a new disturbance but no heavy rain. The second decade was calm but there was further rain over eastern Arabia on 19–20 February. Sharjah received 12 mm, Seeb 19 mm, Sur 26 mm and Saiq 42 mm on 19 February, while Qaisumah received 8 mm on 20 February.

After another period of relatively calm weather, further convective instability originating over the Red Sea extended to the centre of the peninsula giving heavy rain over western and central Saudi Arabia for three days; Abha reported 13 mm, Qassim 19 mm on 1 March, and Bisha 10 mm and Khamis Mushait 18 mm on 2 March. On the following day another disturbance followed the axis Cairo-Dubai and gave 14 mm of rain at Hofuf on 6 March. Further disturbances moving eastwards to Iran and Afghanistan were detected on Meteosat IR imagery. On 19 March a new disturbance originating over the Red Sea gave rain in Aden.

Maximum temperatures were very variable, depending on the origin of the air mass, but were generally in the range 20° to 33°C.

Breeding conditions

The frequent rainfall resulted in favourable breeding conditions on the central and northern Tihama and in inland wadis. Conditions were also favourable for breeding in parts of the South-Eastern Desert of Egypt and on the Gulf of Aden coast of PDR Yemen.

Locusts

KINGDOM OF SAUDI ARABIA

Ground control operations continued in the Qunfidah Tihama until 23 February when the area was reported clear. The Lith Tihama was cleared in early February.

North of Jeddah numerous small mature swarms appeared and split up:

- at Badr (2345N/3850E) control was undertaken against a mature egg-laying swarm seen on 9 February; it scattered over 12 square kilometres, but groups of adults were present at densities of 20 per square metre. On 10 February another mature copulating swarm was controlled 36 kilometres south of Badr. This scattered over 20 square kilometres, adults in patches at densities of up 15 per square metre. On the following day adults had further scattered and were present at densities of 50-100 per hectare.

- in the Umm Lejj (2503N/3715E) area a 1 square kilometre mature swarm was controlled 26 km south of Umm Lejj on 17 February, as well as groups of adults at densities of 30 per square metre over ½ kilometre but hatching occurred on 1 March. On 18 February a 1 square kilometre copulating swarm was controlled 80 km north-east of Umm Lejj. On 19 February there was further control against a mature swarm measuring 800 m x 1300 m in patches at densities of up to 30 per square metre in the same area, and on 22-23 February control was undertaken against laying swarmlets over an area of 50 square kilometres. By 1 March the area was reported clear.

- 70 kilometres east of Yenbo (2405N/3802E) groups of mature adults and first instar hopper bands were controlled.

- in the Rabigh area groups of mature adults scattered over 1 square kilometre were controlled on 15 February. Later, groups of laying adults were controlled over an area of 80 square kilometres.

Scattered mature, copulating and laying adults at densities of 200-300 per hectare and third to sixth instar hoppers and fledglings at densities of 500-600 per hectare were present 20 kilometres south-west of Mecca on 22 March.

Adults were controlled using Fenitrothion, Malathion and BHC applied by ground sprayers. Hoppers were controlled by dusting with BHC.

EGYPT

A mature swarmlet reached Abu Ramad from the south-east on the evening of 5 February during a sandstorm and scattered over 10 kilometres along the Red Sea coast. Egyptian teams were controlling adult and hopper infestations in Wadi Di-ib in Sudan.

There were reports of adults in wadi Allaqi in mid-March.

PDR YEMEN was reported clear between December 1985 and February 1986. IRAQ was reported clear in January.

There were no other reports from the Region.

SOUTH-WEST ASIA

Meteorology

Eastward moving Mediterranean depressions brought variable rainfall to Baluchistan during February. Jiwani recorded 34 mm on 2 February and there was localised rainfall in Kharan, Nushki, Turbat,Panjgur and Pasni between 1 and 3 February. Another disturbance gave light rain at Turbat and Khuzdar on 8-9 February. On 11-12 February there were widespread heavy rains in Khuzdar, Panjgur, Pasni, Uthal and Karachi. There were further heavy rains on 17-20 February in Pasni, Turbat, Quetta, Nushki, Kharan, Khuzdar, Panjgur and Uthal areas. During the month Quetta received 280 mm, Pasni 141 mm, Panjgur 32.6 mm and Khuzdar 38 mm.

Over India continental high pressure (1025 millibars) was progressively replaced by reactivated westerly disturbances which gave variable rainfall in the summer breeding area.

Maximum daily temperatures were very variable, ranging from 12°C at Quetta to 31°C in Gujarat.

FORECAST FOR APRIL-MAY 1986

Winter-early spring breeding along the Red Sea coasts of Saudi Arabia, Sudan and probably Ethiopia will terminate. Despite control measures there may be considerable numbers of escapes. Most are likely to move south-west into the interior of Sudan but there may be further breeding in the interior of north-west Saudi Arabia.

In West Africa scattered adults will persist in areas of greener vegetation in Mauritania, north-east Mali and north-west Niger. If there is significant pre-monsoon rain north of 17°N breeding is likely to commence but it will initially be at low density.

In North-West Africa there may be low density breeding in a few localities in the Algerian Sahara.

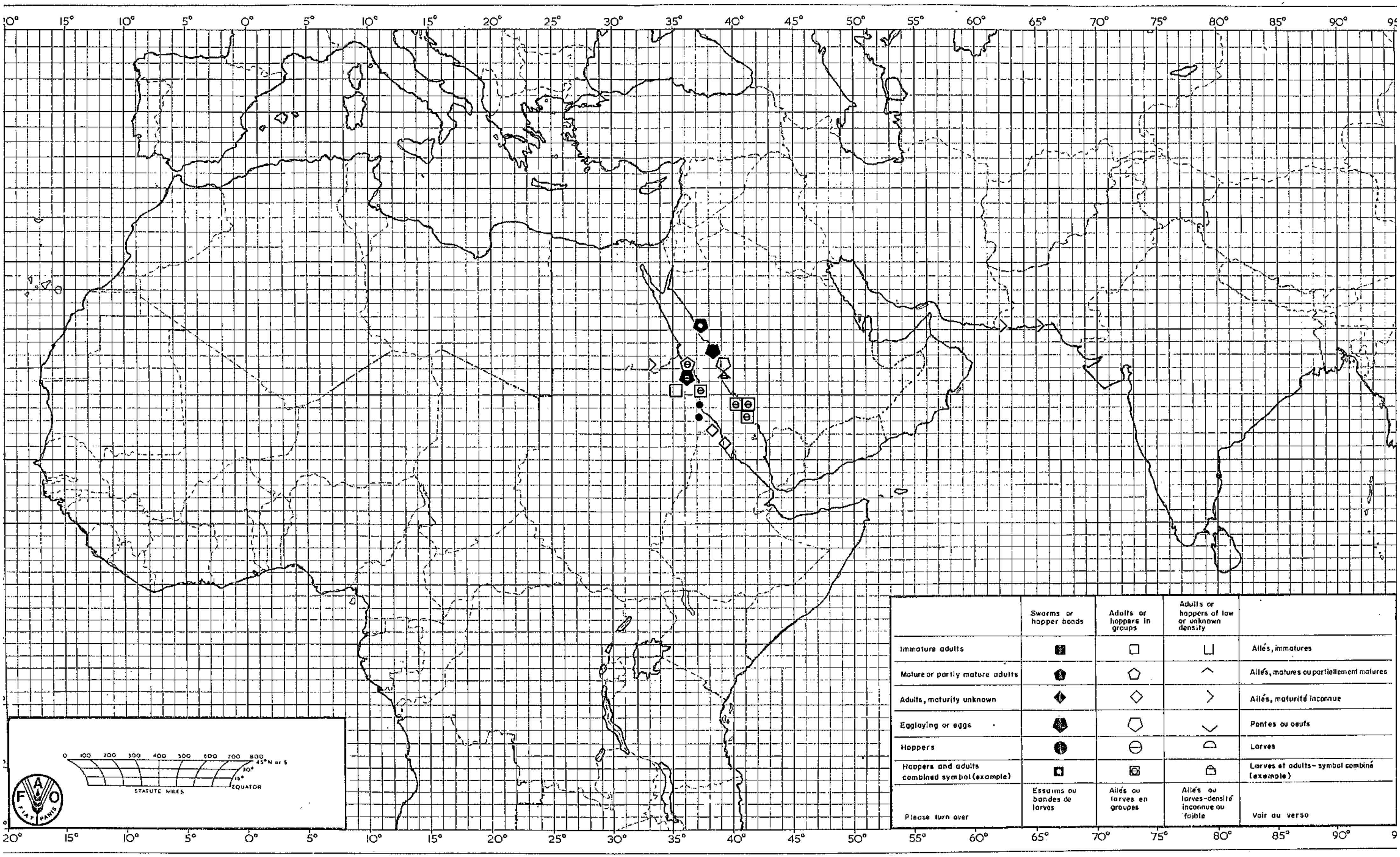
In Eastern Africa winter-spring breeding along the Red Sea coast of Sudan and probably Ethiopia will come to an end. There may be considerable numbers of escapes, particularly from northern Ethiopia possibly including one or two small swarms and these will move into the interior of Sudan. They may also be augmented by some escapes from Arabia. Small numbers of adults may be present on the coastal plains of northern Somalia.

In the Near East breeding will end on the Red Sea coastal plains of Saudi Arabia but may continue in interior areas in the north-west of the country. Despite control measures some escapes may occur and these will probably move south-west across the Red Sea. Low density breeding may occur in coastal and some interior areas of PDR Yemen.

In South-West Asia initially low density breeding is likely to occur in coastal and interior areas of Baluchistan, and may occur in Las Bela district. Numbers of adults will increase in the Tharparkar, Khipro, Nara and Cholistan deserts of Pakistan and Rajasthan of India due to immigration from the west.

Rome, 25 March 1986

Desert Locust Situation Summary No. 90 FEBRUARY-EARLY MARCH/FEVRIER DEBUT MARS 1986



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DESERT LOCUST SITUATION SUMMARY AND FORECAST

NO. 91 MARCH - EARLY APRIL 1986

SUMMARY

Gregarious breeding continued in western Saudi Arabia and on the Red Sea coasts of Sudan and south-east Egypt. Control was in progress but a number of small swarms were produced, one of which reached northern-central Saudi Arabia, while scattered adults reached Jordan. Small numbers of adults were present in Pakistan and India and there was small scale breeding in Baluchistan or Pakistan.

W/R 9551

DESERT LOCUST SITUATION, MARCH-EARLY APRIL 1986

WEST AFRICA

Meteorology

There were several waves in the Intertropical Front, which moved slowly north reaching 15°N in mid-April. Earlier, there were several pulls of the FIT, as reported in Summary No. 90. This disturbance traversed the Sahara towards Libya and Egypt and was clearly seen on Meteosat imagery. Other pulls of the FIT occurred between 23 and 28 March but the paucity of rain gauges in the Sahara prevented any assessment of the areas receiving rain.

On 3-4 April a family of Mediterranean disturbances of Atlantic origin crossed the Sahel producing sandstorms and thundery showers.

Regarding thermoconvective instability there were locally heavy showers in the vicinity and to the south of the FIT, giving daily rainfall totals frequently exceeding 20 mm.

Daily maximum temperatures were around 40°C in the interior and between 20° and 30°C in coastal areas.

Breeding conditions

No rain was reported from the breeding areas and little green vegetation remained.

Locusts

MALI

One adult was seen in the Gourma at 1624N/0003W.

No surveys were made and no adults were reported from MAURITANIA, NIGER or CHAD.

NORTH-WEST AFRICA

Meteorology

Numerous Atlantic disturbances crossed the area from the west as reported in Summary No. 90. On 5 March the GTS reported 7 mm, 16 mm, 17 mm and 23 mm at Djelfa, El Golea, Timimoun and Ghardaia respectively, while Meteosat imagery indicated that the rain extended further south. The disturbed situation continued during the second decade of March. Several sandstorms accompanied thundery cold fronts but no rainfall totals from the breeding areas were transmitted by the GTS.

It has to be stressed that gaps in the GTS network prevent an adequate analysis of local effects, for example, of the northward "pulls" of the FIT as reported under West Africa. During the third decade a pull of the FIT resulted in rain at Tamanrasset in the Ahaggar on 27 March.

During the first decade of April, after a calm period, there were further cold fronts and waves associated with Atlantic disturbances, in particular from 6 April, when Agadir reported 21 mm and strong sandstorms affected all the Maghreb. During the second decade, and in particular on 13-14 April non-quantified rain was reported from In Salah and its surroundings.

Daily maximum temperatures frequently exceeded 30°C in the Sahara. In coastal areas of Morocco, Algeria and Tunisia maximum temperatures were generally between 15° and 20°C while in Libya they frequently exceeded 20°C.

Breeding conditions

Conditions were favourable for breeding in coastal areas of north-west Libya and in the Libyan oases.

Locusts

No locusts were reported from the Region.

EASTERN AFRICA

Meteorology

The period was marked by the passage of numerous disturbances and associated fronts. Northern and central Sudan, however, were generally dry although Port Sudan recorded 24 mm of rain on 3-4 March. The position of the Red Sea Convergence Zone was more variable than usual.

In early April a "pull" of the ITCZ, similar to those observed in West Africa, was significantly reinforced by "Rift fronts" and Mediterranean depressions reactivated over Arabia. On 4-7 April the suction extended on a south-west/north-east axis, giving significant rain in Djibouti, northern Somalia (no data available) and Ethiopia where Diredawa received 28 mm on 7 April, and 25 mm on 8 April. There were frequent thundery rains over the Ethiopian highlands where daily rainfall totals frequently exceeded 30 mm; Diredawa recorded 47 mm on 21 March.

Thermoconvective activity was well developed over Tanzania, Uganda, Kenya and southern Sudan with the northward movement of the ITCZ, particularly during the period 3-8 April when the ITCZ reached 8°N.

Maximum daily temperatures approached 40°C in Sudan and Somalia but in the Ethiopian highlands they were frequently less than 25°C.

Breeding conditions

Conditions were favourable for breeding in Kkors on the northern and southern sectors of the Red Sea coastal plains in Sudan during March and also along the Ethiopian coast north of Massawa. The southern sector of the Sudan coastal plains, however, were drying out in late March. NOAA/AVHRR imagery also indicated that conditions were favourable for breeding on the north-west coastal plains of Somalia and in coastal areas of Djibouti.

Locusts

SUDAN

Groups of late instar hoppers and adults were sprayed with Dieldrin from the air over 1300 hectares at Mersa Arus. Dense late instar hopper bands and fledglings were sprayed with Dieldrin, Diazinon and Fenitrothion over 6145 hectares in Khores Ashat, Gowb, Tobein, Hambokeib and Hoshiry south of Port Sudan. Baiting was in progress against light infestations of late instar hoppers and adults at Karora. On 24 March a low density swarm was observed copulating over 50 hectares at Taharay (1855N/3717E), and was controlled.

ETHIOPIA

In February and March there were unconfirmed reports of large numbers of locusts on the coastal plains north of Massawa, and in January hoppers and adults were reported for 60 kilometres around Mersa Teclai.

There were no other reports from the Region.

NEAR EAST

Meteorology

As reported in Summary No. 90 thermoconvective instability in early March gave the following rain: 13 mm at Abha and 19 mm at Qassim on 1 March, 10 mm at Bisha and 18 mm at Khamis Mushait on 2 March. A reactivated disturbance along the axis Cairo-Dubai gave 14 mm of rain at Hofuf on 6 March. A further disturbance originating over the Red Sea gave rain in Aden. On 24-26 March a Mediterranean depression passed across northern Arabia giving widespread heavy rains.

In early April a "pull" of the ITCZ, associated with a Rift Front and provoked by a Mediterranean depression brought moist air to Arabia resulting in variable rainfall. Khamis Mushait reported 38 mm on 7 April, 28 mm on 8 April and 40 mm on 10 April, but the rain extended to the Gulf.

The position of the Red Sea Convergence Zone was rather variable in position, being at about 15°N in mid-March. During the first decade of April it had displaced towards 20°N as a result of the interaction of the ITCZ and Mediterranean disturbances through "Rift Fronts".

Maximum daily temperatures fluctuated depending on the passage of disturbances. In periods of dry weather they were 35°C or more but during cloudy or rainy weather they were frequently below 20°C.

Breeding conditions

Breeding conditions were favourable on the Tihama north of Jeddah but were drying up to the south of Jeddah.

Locusts

KINGDOM OF SAUDI ARABIA

On 4 March a small thin density mature swarm was reported near Tuwwal north of Jeddah. On 15 March a small swarm was seen north of Taima and a thin swarm was seen at Uneiza in the Qassim.

Ground control operations continued on the northern Tihama. From 1-15 March 453 hectares of first and second instar bands had been controlled using 900 kg of BHC dust around Rabigh; 76 first to third instar bands were controlled between 2 and 11 March around Yenbo; 1543 first to third instar bands were controlled over 119 square kilometres around Umm Lejj using 925 litres of Malathion and 525 kg BHC dust; 65 bands were controlled over 2250 hectares using 280 litres of Malathion and 110 kg of BHC around Badr on 3-6 March. A report of hoppers at Shawwaq (2722N/3629E) on 15 March was being investigated.

Control continued during the second half of March and in April but was completed in Umm Lejj and Yenbo by 14 April.

Scattered mature, copulating and laying adults at densities of 200-300 per hectare and third to sixth instar hoppers and fledglings at densities of 500-600 per hectare were present 20 kilometres south-west of Mecca on 22 March.

EGYPT

Control operations were completed against groups of hoppers and adults over 3000 hectares at Gash Amir (2214N/3613E) and Khor Adarem (2139N/3607E) in early March. By 10 April 1000 first and second instar bands were controlled over an area of 50 square kilometres around Abu Ramad in the South-Eastern Desert, and control operations were continuing.

JORDAN

Scattered adults were reported from Krak on 30 March and isolated adults were reported from Wadi Araba. On 1 April three groups of adults were reported flying north-east near Aqaba.

There were no other reports from the Region.

SOUTH-WEST ASIA

Meteorology

During the first decade of March high pressure over central Asia directed dry continental air over winter-spring breeding area. By contrast, during the second decade western disturbances were accompanied by rain. According to the GTS daily amounts totalled 15-30 mm north of 30°N. The Pakistan Locust Situation Bulletin reported variable rainfall at Quetta, Khuzdar, Nushki, Kharan and Panjgur. During the third decade a new family of very active disturbances gave heavy rain throughout Baluchistan up to 26 March, after which the rain extended eastwards. The end of the month was characterized by an anticyclonic ridge extending from central Asia to 60°E. There were further disturbances in early April but according to the GTS they brought little rain.

Daily maximum temperatures ranged from less than 20°C in northern Baluchistan to 40°C in the summer breeding areas.

Breeding conditions

Breeding conditions were favourable in the winter-spring breeding areas of Pakistan.

Locusts

PAKISTAN

During the second fortnight of February scattered locusts were seen at four localities in Uthal, Turbat and Pasni districts, the maximum density being 175 per hectare at Phore (2533N/6556E) on 21 February. During March scattered adults were seen at many localities in Uthal, Turbat, Pasni and Nushki districts the maximum density being 3-4 per hectare. During the first fortnight of April scattered adults were reported with a maximum density of 2-3 adults per hectare at Tinkanda (2531N/6642E) on 7 April. Some solitarious first to second instar hoppers were found near Pasni during the second week of April.

INDIA

Scattered adults were found at four localities in the first fortnight of March, the maximum density being 150 per square kilometre at Nawatala (2707N/7139E) on 4 March. In the second fortnight of March adults were found at two localities, the maximum density being 75 per square kilometre at Tadana (2720N/7132E) on 17 March.

There were no reports from AFGHANISTAN or IRAN.

FORECAST FOR MAY-JUNE 1986

The forecast period is characterized by a marked redistribution of adults as they leave the winter-spring breeding areas and move towards the summer breeding areas. During the 1985-86 winter-spring breeding season gregarious populations have developed on both sides of the Red Sea and adults have reached Jordan for the first time since the end of the last major plague. Considerable numbers of adults are likely to move south-west into the interior of Sudan, and perhaps further west. Others may reach southern Arabia and some may move east.

In West Africa scattered adults will persist in areas of greener vegetation in Mauritania, north-east Mali and north-west Niger, where breeding may commence in areas receiving early monsoon rain. It is possible that some adults may reach Niger from the east.

In North-West Africa there may be low density breeding in a few localities in the Algerian Sahara.

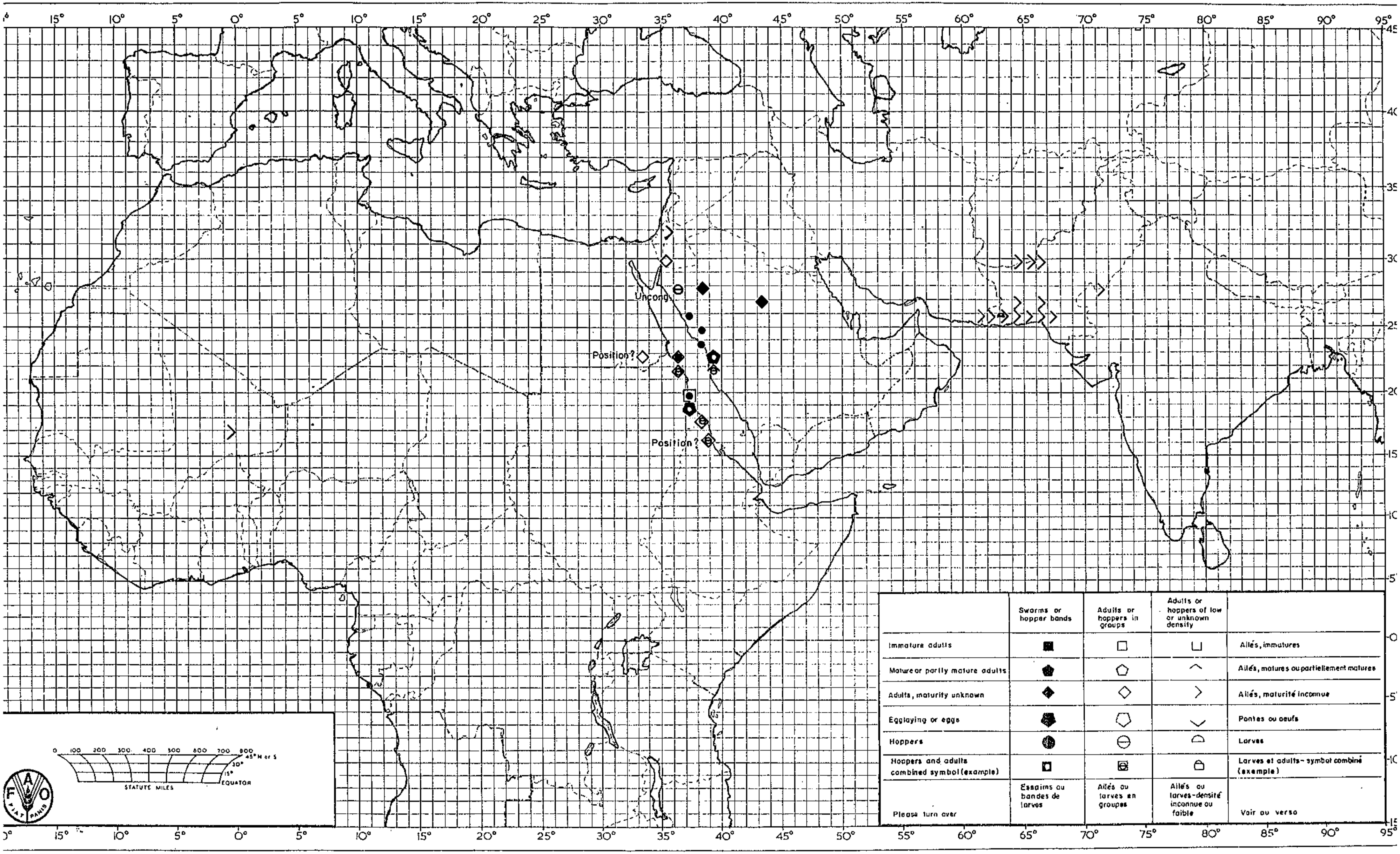
In Eastern Africa spring breeding along the Red Sea coast of Sudan and Ethiopia will come to an end. There may be considerable numbers of escapes, particularly from northern Ethiopia, possibly including one or two small swarms and these will move into the interior of Sudan. They will probably be augmented by adults from Arabia. Small numbers of adults may be present on the coastal plains of northern Somalia.

In the Near East breeding will continue in north-west Saudi Arabia and may extend into adjacent areas of Jordan and possibly western Iraq. It is likely to end on the Red Sea coast of Saudi Arabia and Egypt. If there are any escapes most are likely to move south-west to Sudan but some may move south to the PDR Yemen and others east across the Arabian Gulf.

In South-West Asia small scale breeding will continue in Baluchistan and adult numbers will increase in the summer breeding area. Breeding may commence there but initially it will be on a small scale. There may be an influx of adults from the Near East but this will not include swarms.

Rome
25 April 1986

Desert Locust Situation Summary No. 91 MARCH-EARLY APRIL / MARS DEBUT AVRIL 1986



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Locusts, other migratory pests and emergency operations group

DESERT LOCUST SITUATION SUMMARY AND FORECAST

NO. 92 APRIL - EARLY MAY 1986

SUMMARY

Gregarious breeding continued on the Red Sea coastal plain of Sudan and in western Saudi Arabia. Control operations continued but some escapes were reported. Small numbers of hoppers and adults were reported from Baluchistan of Pakistan.

W/R 9818

WEST AFRICA

Meteorology

The Intertropical Front (FIT) continued to move towards the Sahel. In late April several disturbances of Atlantic origin interacted with the monsoon over West Africa giving isolated rain falls of 3-4 mm over Mauritania. Meteosat imagery indicated that these interactions and "pulls" of the FIT occurred on the axis Côte d'Ivoire-Burkina Faso and, according to GTS data, gave daily rainfall totals of 10-80 mm. It is probable that these rains extended to more arid regions in Niger and Chad but were not recorded by the GTS synoptic network. A telex from OCLALAV dated 5 May confirmed that some monsoon rain had fallen in Mauritania, Mali and Niger. On 6 May a wave associated with a pull of the FIT reached 16°N over western Mali and was associated with strong thermoconvective activity.

Daily maximum temperatures were around 40°C in the interior and 30°C in coastal areas.

Breeding conditions

Breeding conditions will become favourable in southern Mauritania and western Mali, and any other areas receiving 25 mm of rain or more during northward pulls of the FIT.

Locusts

No locusts were reported.

NORTH-WEST AFRICA

Meteorology

Cyclogenesis and frontogenesis again occurred over the western Mediterranean, influencing the Maghreb in differing degrees. According to GTS data and Meteosat imagery several "pulls" of the FIT added to these disturbances of Atlantic origin, but according to the GTS data available, daily rainfall totals within the Recession Area were less than 5 mm, except on 4 May when 15 mm was recorded at El Golea.

Daily maximum temperatures varied very considerably, from less than 20°C to approaching 40°C in the interior, according to the origin of the air mass; in coastal regions they were generally in the range 15° - 25°C.

Breeding conditions

According to NOAA/AVHRR imagery conditions were favourable for breeding only in coastal areas of north-west Libya, and in the Libyan oases.

Locusts

ALGERIA

In March small numbers of immature adults were seen at seven localities in Tidikelt and northern Tassili-n-Ajjer.

EASTERN AFRICA

Meteorology

The ITCZ moved northward fairly regularly despite interactions with the Mediterranean disturbances mentioned in Summary No. 91, and in spite of the complementary effects of the instability "Rift" fronts. One such period of instability in late April gave widespread and locally heavy rain over Somalia. There was also thermoconvective activity over the Ethiopian highlands which sometimes extended to the Red Sea coastal plains. Hot dry winds prevailed over northern and central Sudan.

Maximum daily temperatures reached 40°C in northern Sudan but were about 25°C in the Ethiopian highlands.

Breeding conditions

Dense green vegetation was reported between Suakin and Tokar on the Red Sea coast of Sudan. Conditions have probably become suitable for breeding in certain coastal areas of northern Somalia.

Locusts

SUDAN

On 15 April groups of first to third instar hoppers were controlled over 1200 hectares between Taharoy (1855N/3719E) and Taheila (1853N/3719E) using diazinon. On 19 April second to fourth instar hopper bands were also controlled using diazinon over 800 hectares between Gowb (1857N/3715E) and Taharoy.

During the last week of April dense groups of immature adults were being controlled by Egyptian teams in the Abu Ramad - Mount Elba area of the northern sector of the Red Sea coast.

There were no other reports from the Region.

NEAR EAST

Meteorology

The Red sea Convergence Zone continued to fluctuate in intensity and position as reported in Summary No. 91, as a result of interactions between the ITCZ, Rift thermoconvective fronts and Mediterranean disturbances, which were reactivated crossing Arabia. From ships reports the most frequent position was 13^{o}N. There were numerous thunderstorms associated with the eastward passage of cold fronts, which gave widespread and heavy rain. Qassim, for example, reported 43 mm on 20 April and Taiz 35 mm on 27 April. There was frequent light rain in Oman.

Maximum daily temperatures were very variable depending upon the origin of the air mass, but reached 42^{o}C in the interior by the end of April. Along the coasts these were generally in the region of 30^{o}C.

Breeding conditions

Ecological conditions were reported to be favourable over large parts of Saudi Arabia.

Locusts

KINGDOM OF SAUDI ARABIA

Control operations were concluded against hopper bands of varying sizes and densities and against groups of fledglings and immature adults in the Umm Lejj, Yenbo, Badr and Rabigh areas. Over 3000 hopper bands were controlled. Control was continuing against hopper bands, fledglings and immature adults in the Al Ula, Sakia (2118N/3936E), Khulais, Tuwwal and Usfan areas.

Solitarious adults were also reported in Jeddah, Mecca, Rabigh, Asir, Madina, Qassim and Taima at maximum densities of 400 per hectare.

EGYPT

As reported in Summary No. 91, 1000 medium sized first and second instar bands were controlled over an area of 50 square kilometres around Abu Ramad in the South-Eastern Desert. During the last week of April dense groups of immature adults were seen in the Abu Ramad and Mount Elba areas.

JORDAN

As reported in Summary No. 91, three groups of adults were reported flying north-east near Aqaba on 1 April. There were no later reports.

IRAQ and the SULTANATE OF OMAN were reported clear during March.

There were no other reports from the Region.

SOUTH-WEST ASIA

Meteorology

The weather was warm and dry in the winter-spring and summer breeding areas with frequent dust storms in Baluchistan. Medium rain was reported from Bahawalpur on 24 April associated with the passage of a westerly depression.

Maximum daily temperatures were generally 35-40°C in winter-spring and summer breeding areas.

Breeding conditions

Ecological conditions were favourable for breeding in Baluchistan.

Locusts

PAKISTAN

During the first half of April, a total of 24 adults were seen at 15 localities in Uthal, Turbat, Pasni and Nushki areas, the maximum density being 2-3 per hectare at Tinkanda (2533N/6638E) on 7 April. Scattered first and second instar hoppers were found in six areas totalling 19 squares kilometres in the Pasni district. In the second half of April a total of 33 adults were found at 18 localities inthe Uthal, Turbat, Pasni and Nushki areas, the maximum density being 4-5 per hectare at Rumra (2520N/6344E) on 26 April. Scattered first to fifth instar hoppers were found at nine localities in the Turbat and Pasni areas.

No reports were received from AFGHANISTAN, INDIA or IRAN.

FORECAST FOR JUNE-JULY 1986

Adults produced in the spring breedingareas will move into the summer breeding areas and start to breed. Successful winter-spring breeding resulted in the development of gregarious populations on both sides of the Red Sea. Control operations have probably destroyed the main concentrations but considerable numbers of adults may have survived. Most are likely to move into the interior of Sudan, and perhaps further west. Others may reach southern Arabia and some may move east.

In West Africa small numbers of adults will persist in Mauritania, north-east Mali and north-west Niger, where breeding will commence in areas which receive early monsoon rains. It is possible that some adults may reach Niger from the east.

In North-West Africa very low density breeding in a few localities in the Algerian Sahara will terminate.

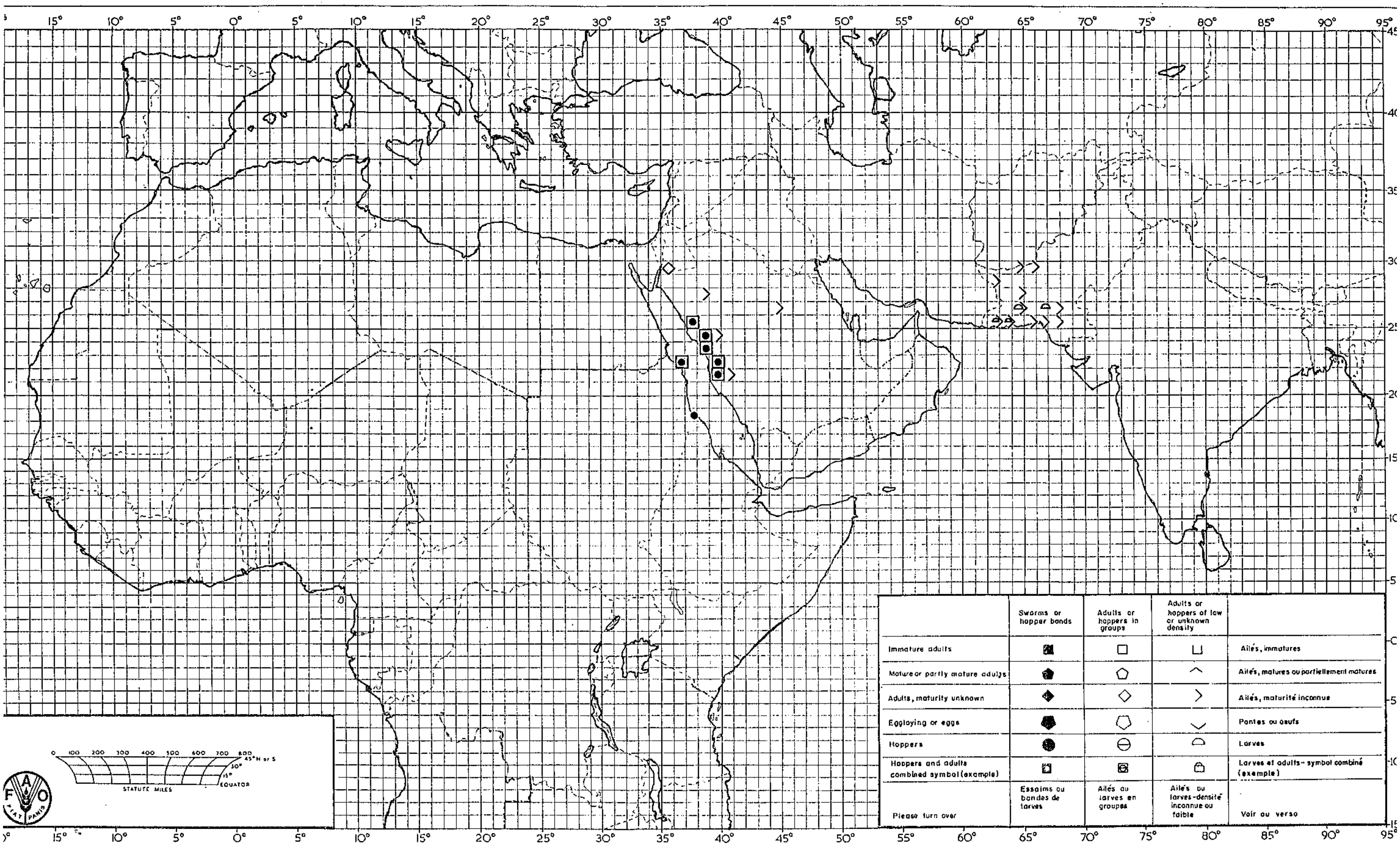
In Eastern Africa considerable numbers of adults are likely to reach the interior of Sudan, possibly including one or two small swarms. These are likely to start to breed towards the end of the forecast period. Small numbers of adults may be present on the northern coastal plains of Somalia.

In the Near East breeding will termiante in north-western and western Saudi Arabia. If there are escapes they are most likely to move south-west to Sudan, but some may move south to PDR Yemen and others east across the Gulf.

In South-West Asia small scale breeding will terminate in Baluchistan. Adult numbers will increase in the summer breeding areas, where breeding may commence, but initially it will be on a small scale.

Rome
19 May 1986

Desert Locust Situation Summary No. 92 APRIL - EARLY MAY/AVRIL - DEBUT DE MAI 1986



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DESERT LOCUST SITUATION SUMMARY AND FORECAST

NO. 93 MAY-EARLY JUNE 1986

SUMMARY

Gregarious breeding terminated in north-western Saudi Arabia but control continued in central-western Saudi Arabia. Some scattered adults reached the highlands of the Yemen Arab Republic. Groups of adults were present in south-western Algeria and eastern Morocco. Small numbers of adults were present in northern Somalia. There were small numbers of adults in Pakistan and India, and small scale breeding in Pakistan.

W/S0323

WEST AFRICA

Meteorology

As reported in Summary No. 92 there were monsoon rains over western Mali associated with a pull of the FIT, which reached 16°N, and very strong thermo-convective activity. Meteosat imagery showed the very rapid development of the instability and its decline within 72 hours. The median position of the FIT lay between 15° and 18°N, the latter position only being reached during pulls of the FIT by Mediterranean depressions. Some dust storms accompanied the instability. According to the GTS there was apparently no important rain in the summer breeding areas but the gaps in the meteorological network mean that local rains may not have been observed.

Maximum temperatures were generally around 43°C in the interior and 25°C in coastal areas.

Breeding conditions

Conditions will have become favourable for breeding in areas receiving 25mm of rain or run-off during northward pulls of the FIT.

Locusts

No surveys were undertaken and no locusts were reported.

NORTH-WEST AFRICA

Meteorology

Throughout virtually the whole of May and in early June Atlantic depressions affected the Maghreb in varying degree and gave rise to local thunderstorms. As reported in Summary No. 92 El Golea received 15mm on 4 May, while Tamanrasset recorded 21mm on 12 June, apparently in the form of a local shower rather than widespread rainfall.

Maximum temperatures were around 40°C in the Sahara and 25°C in coastal areas.

Breeding conditions

Vegetation was reported to be drying out in the southern Sahara in mid-May.

Locusts

ALGERIA

Immature adults at densities of 400-10.000 per hectare over areas of 5-100 hectares were found at six localities in southern Algeria between 13 and 17 May, the largest population being at Oued Ireliane (2031N/0236E) where BHC bait was applied.

MOROCCO

One immature adult was captured at Tifnit (3012N/0938W) on 4 May.

In early June a survey team found immature adults at a density of 200 per hectare over 300 hectares at Merzouga (3120N/0417W).

There were no reports from LIBYA or TUNISIA.

EASTERN AFRICA

Meteorology

As indicated in Summary No. 92, the exact position of the ITCZ was partially masked by the influence of the interactions between Mediterranean depressions and Rift instability fronts. The complexity of this superposition of thermoconvective activity was clearly shown on Meteosat imagery. As a result there were quasi-permanent thundery showers extending from Eritrea to Uganda and over the Horn of Africa, but no daily station totals are available from the coastal breeding areas. Rainfall in the interior of Sudan had reached 15^{o}N by early June.

Maximum temperatures ranged from 40^{o}C in Sudan to 30^{o}C in the Ethiopian highlands.

Breeding conditions

There were widespread heavy rains over the Somali peninsula and NOAA/AVHRR imagery showed well developed green vegetation on the Sillil plains and east of Mait. There was also green vegetation north-west of Massawa but the coastal plains of Sudan were dry.

Locusts

SOMALIA

During a ground survey along the northern coast from Zeila to Bossaso between 7 and 22 May a total of 40 solitarious adults were observed.

There were no further reports from the Region.

NEAR EAST

Meteorology

Local thermoconvection and interactions between the ITCZ and Mediterranean disturbances were the origins of generally light rains. For example the GTS reported 16mm at Qaisumah on 9 May and Meteosat imagery confirmed these very rapid and localised developments. In Southern Arabia there were several showers, Taiz recording 6mm on 11 June.

This instability extended towards eastern Arabia but the rains associated with it were not heavy.

The Red Sea Convergence Zone occupied a very variable position between 15° and 20°N as a result of the complex influence mentioned above.

Maximum temperatures were generally around 45°C in the interior of Arabia, and 30°C in coastal areas.

Breeding conditions

Breeding conditions continued to be suitable in the interior of Saudi Arabia but the Tihama was dry.

Locusts

KINGDOM OF SAUDI ARABIA

Aerial control operations were concluded in the Umm Lejj and Al Ula areas on 20 May with good results reported.

In late May infestations of late instar hoppers and fledglings were found in the Sahl Rukba (2212N/4105E) area and Radwan areas about 150 kilometres north-east of Taif. These were controlled by ground teams. Also in late May scattered hoppers were reported in cultivations in the Majmaah, Hariq and Dawadmi areas.

YEMEN ARAB REPUBLIC

Scattered immature adults were reported from Sa'dah, Sana'a and Dhamar on 12 June, and later groups were reported in cultivations in the Dhamar region. Control measures were in progress.

IRAQ was reported clear in May. There were no other reports from the Region.

SOUTH-WEST ASIA

Meteorology

The south-west monsoon moved progressively north with its usual intensity; Bombay recording 113mm on 10 June. On 15 June a vast heat low, with 990 mb in the centre, covered virtually the whole of the Indian sub-continent and also Iran and Afghanistan, giving more and more frequent thunderstorms. Light to moderate rain was reported from Khuzdar, Uthal, Panjgur and Turbat, during the first fortnight of June.

By contrast May, and in particular the first fortnight, was generally dry in the spring and summer breeding areas. Bikaner, however, recorded 12mm of rain between 8 and 15 May and Sikar recorded 22mm.

Maximum daily temperatures were 43-46°C in the summer breeding areas.

Breeding conditions

Breeding conditions became unfavourable except in a few low lying areas in Baluchistan in the first half of May. The Scheduled Desert Area of India was dry except around Bikaner.

Locusts

PAKISTAN

During the first fortnight of May, a total of 98 adults was seen at 18 localities in Uthal, Pasni, Turbat and Nushki areas, the maximum density being 14 per hectare at Rumra on 9 May. Scattered second to fifth instar hoppers were seen at three localities in Turbat and Pasni districts during the first half of May. Pakistan was reported clear during the first half of June.

INDIA

India was reported clear in April but isolated adults were reported from three localities in Jaisalmer district in the first half of May, the maximum density being 150 per square kilometre at Sadrao (2723N/7104E) on 12 May.

There were no reports from AFGHANISTAN or IRAN.

FORECAST FOR JULY-AUGUST 1986

Breeding will commence in the summer breeding areas, extending from Mauritania to Rajasthan in India. Over most of the area it will initially be at low density but it may be partially gregarious in Sudan and southern Arabia.

In West Africa, only small numbers of adults are likely to have survived the dry season but they will be augmented by adults produced on spring breeding in North-West Africa. Breeding will commence in southern and central Mauritania, north-east Mali and north-west Niger but initially it will be at low density.

In North-West Africa, there may be further breeding in southern Algeria south of the Ahaggar.

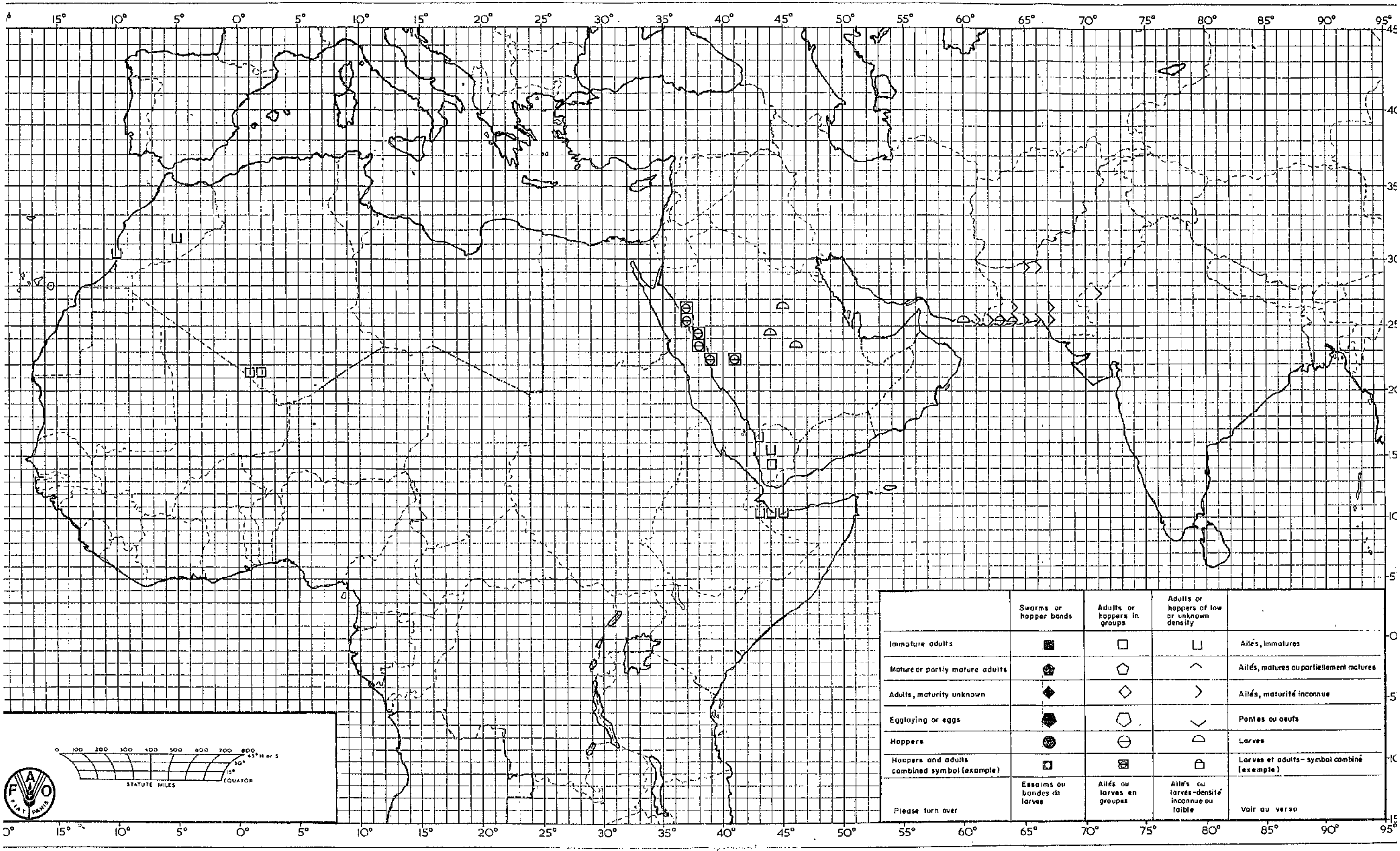
In Eastern Africa, breeding will commence in the interior of Sudan. It is likely to be widespread and generally at low density but it may be partly gregarious, depending on the scale and phase of any escapes from northern Ethiopia. There is also likely to be widespread, although initially low density, breeding on the northern coastal plains of Somalia, which may be invaded by scattered adults from Arabia.

In the Near East, breeding will terminate in the northern interior of Saudi Arabia, but is likely to commence in the interior of Yemen AR and Yemen PDR and in coastal areas of Yemen PDR.

In South-West Asia, scattered adults will move from Baluchistan into the summer breeding areas and breeding will commence. Initially it will be at low density.

Rome
23 June 1986

Desert Locust Situation Summary No.93 MAY - EARLY JUNE / MAI - DEBUT DE JUIN, 1986



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DESERT LOCUST SITUATION SUMMARY AND FORECAST

N. 94 JUNE-EARLY JULY 1986

SUMMARY

There have been numerous reports of dense swarms in northern Eritrea which are likely to be of Desert Locusts and gregarious hatching was reported in late July. Another swarm was reported in an adjacent area of Sudan and high density populations have been reported causing damage in Eritrea and Tigrai provinces of Ethiopia. Two immature swarms reached Yemen Arab Republic in early June and split up as they moved south. Control operations against patchy gregarious breeding terminated in Saudi Arabia. Small scale under control operations were also mounted in south-eastern Morocco. Considerable numbers of adults were reported from Chad, mixed with Locusta and grasshoppers. Scattered adults were also reported from Algeria, Somalia, Pakistan and India.

W/S 0945

WEST AFRICA

METEOROLOGY

The Intertropical Front oscillated between 14° and 20° N during June and early July, reaching higher latitudes over Mauritania and Mali but remaining at the level of Lake Chad in the east. Meteosat infra-red imagery showed the development of the thermoconvection associated with the monsoon. Rainfall, however, was generally below average during June although there was some significant rain in northern areas: Arlit received 31 mm in 1 day, Oum Ararene 23 mm in 2 days and Agades 11 mm in one day. There were better rains in some areas during the first decade of July, Aioun el Atrouss recording 15 mm in comparison with the long term mean of 24 mm, GAO recording 24 mm (15 mm), Zinder 48 mm (39 mm) but Atar, Akjoujt, Boutilimit and Nouakchott remained dry while Tidjikja received 1 mm.

Maximum daily temperatures exceeded 40°C in interior areas.

BREEDING CONDITIONS

Breeding conditions will have become suitable for breeding in areas which have received some 25 mm of rain or equivalent run-off.

LOCUSTS

CHAD

In mid-July in a mixed population of nymphal and adult locusts and grasshoppers in the Bol area (1330N/1430W) 15% were Desert Locusts.

NORTH WEST AFRICA

METEOROLOGY

Several thundery disturbances affected the Maghreb but there was little significant rainfall associated with them according to GTS data, particularly in the recession area. Between the thundery periods ridges of high pressure associated with the Azores anticyclone affected all of the Maghreb, which resulted in generally dry weather. Maximum temperatures were in the range 30-40ºC in the Sahara.

BREEDING CONDITIONS

Conditions were unfavourable for breeding in Morocco except for a few areas where green vegetation persisted.

LOCUSTS

MOROCCO

As reported in Summary No 93, fifth instar hoppers and immature solitarous adults were found over an area of 400 hectares at Merzouga (3120N/0417W) in early June; the density of the adults being 150-200 per hectare. The population was controlled using DDVP and BHC and by the end of June the density had been reduced to 2 individuals per hectare.

ALGERIA

Isolated adults were reported from Ghardaia and Laghouat in June.

EASTERN AFRICA

METEOROLOGY

The Intertropical front reached 15°N by the end of June and in July it moved further north to around 20°N. Rainfall was below average over most of central and northern Sudan during June but improved during the first two decades of July. There were moderate showers over the Ethiopian Highlands. There were further widesprad rains in Somalia during the first fortnight of June but the weather then became dry.

BREEDING CONDITIONS

Conditions were favourable for breeding north-west of Massawa in early June but later became dry. They were also favourable in northern Somalia east of Mait in early June but these areas also became dry in July. Conditions were becoming favourable for breeding in the interior of Sudan in late July.

LOCUSTS

SUDAN

A swarm was seen at Musmar (1814N/3532E) on 25 June flying south-west. During a ground survey on 20-22 July groups of adults were found at a density of 1500 per hectares over 150 hectares at Khore Arab (1847/3525E), and at a density of 1000 per hectare over an area of 200 hectares at Khore Habour (1850/3451E). Both Khores were in flood on 17 July.

ETHIOPIA

Following reports of breeding over large areas of the Red Sea coast and north-west Ethiopia during June ground and aerial surveys were launched in mid and late July respectively.

In mid-July there were reports of "serious" locust infestations from Adigrat (1421N/3932E), Sechet (1327N/3255E), Afdera (1310N/5058E), Mersa Cuba (1615N/3912E) and Algena (1719N/3833E) but the species involved were not indicated. At the same time populations of Desert Locusts mixed with various species of grasshopper were found at Ailet (1535N/3909E) and Met Calabat (1540N/3910-3920E). In late July there were further reports of locust and extensive damage to crops in coastal areas from Massawa (1537N/3828E) to Mersa Gulbub (1632N/3908) and inland from Cam Ceua (1625N/3840E) to Fil Fil (1530N/3900E). The species were Desert Locusts, Locusta, Zonocerus and unidentified grasshoppers. Similar infestations were reported damaging young crops east of Makalle in Tigrai Province. There were also reports of dense swarms and widespread hatching in northern Eritrea but the former had not been detected by aircraft by the end of July.

SOMALIA, DJIBOUTI

No swarms were seen in the course of aerial surveys from 31 May to 18 June in the following areas: the Nogal Valley, Scusciuban, Meleden, Bender Beila, Cape Guardafui, Alula, Bossaso, Erigavo, Las Khoreh and the coastal plains west to Berbera, Bulhar, Silil and Djibouti.

RED SEA/GULF OF ADEN

A ship reported "olive brown locusts 1.5 inches (38 mm) long with pink inner leg" from 1648N 4048E at 12:00 hours GMT on 30 June to 1225N 4529E at 1000 hours GMT on 1 July, i.e. on a front of some 600 kilometres. From the description and the synoptic chart it appears there was a wide-ranging invasion of south-west Arabia from Eastern Africa by grasshoppers of which Catantops probably predominated.

At 09:00 hours 11 July a single grey brown locust was found on board a ship at 1219N 4747E at a time when the surface wind was WSW 10 km/h (240°, 18 kilometres per hour).

NEAR EAST

METEOROLOGY

A large heat low pressure area centred over eastern Arabia resulted in very hot dry weather giving maximum temperatures of up 50°C. Several dust storms were reported by the GTS. The Red Sea Convergence Zone had a mean position of 15°N with temporary shifts to the north when thermoconvective cells developed over the Yemens, where there were some thunderstorms. There was some light rain in Oman.

BREEDING CONDITIONS

Conditions were favourable for breeding in Yemen PDR following rains and some flooding in April - May and in the highlands of Yemen AR. Conditions became unfavourable in Saudi Arabia.

LOCUSTS

KINGDOM OF SAUDI ARABIA

Control was mounted gregarious hopper and adult populations on the Quwaiya area (2403N/4514E) from 27 May to 4 June, in the Dawadmi area (2430N/4423E) from 1-13 June, in the Taif area from 24-31 May and in the Hail area from 27 - 29 May using Sumithion ULV, Malathion ULV, and BHC dust. The population in the Yembu area were cleared. There were also scatterd locusts during June in Taima, Tebuk., Medina and Najran areas.

YEMEN ARAB REPUBLIC

Additional information states that two immature swarms entered Yemen AR from the north in early June. These scattered as they moved south reaching Sana'a, Anis (1445N/4400E), Dhamar and Rada'a (1430N/4455E) where they were present at 50 - 100 per hectare. Solitary adults were also found in Al-Jaff, Marib and Harib in the eastern lowlands.

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

Scattered solitarious adults were found at Ja'ar (1313N/4520E), Al-Fajrah (1300N/4419E) and in Sorghum cultivations at Am-Waday (1345N/4600E) on 25 June.

IRAQ was reported clear in June and there were no other reports from the Region.

SOUTH-WEST ASIA

METEOROLOGY

The weather was generally dry over the summer breeding areas in the first fortnight of June, although an easterly low pressure system reached Punjab and gave 33 mm of rain at Ganganagar, and 19 mm at Bikaner. During the second half of June a seasonal low pressure through formed over Sind and gave rise to medium-rainfall, Bikaner recording 96.5 mm, Bahawalpur 14,4 mm but Barmer received only 0.3mm, Jodhpur traces and Jaisalmer 0.

In the first fortnight of July there were widespread but scattered showers in the summer breeding areas; Bikaner reported 93 mm of rain, Ganganagar 93 mm but Barmer only 4 mm, Jaisalmer 3 mm and Jodhpur 10mm.

BREEDING CONDITIONS

Conditions will have become favorable for breeding in areas which have received substantial rainfall.

LOCUSTS

PAKISTAN

As reported in Summary No. 93, no locusts were reorted during the first fortniht of June.

In the second fortnight a total of 45 adults were seen in localities of Uthal, Turbat, Pasni and Nushki areas of the spring breeding areas.

During the first fortnight of July only five locusts were seen in the spring breeding area and only 22 in the summer breeding areas, the maximum density being only 3 per hectare, and by the second fortnight the maximum density of adults had risen to 2400 per hectare (at Glorowari, 2641N/6936E). Solitarious first hopper were reported and second instar hoppers were reported from Ghorowari and Shomonki (2712N/6930E) on 27 July.

INDIA

In the second fortnight of May scattered adults were found at one locality in Jaisalmer district. No locusts were reported in the first half of June and there were only seven reports in the second half of the month, the maximum density being 150 per square kilometre at Tokla (2739N/7244E) in Bikaner district.

By the first half of July, however, the maximum density reported had risen to 1950 per square kilometre, at Banasar in Bikaner district. One instar hopper was also found at Agnao on 2 July.

There were no reports from **AFGHANISTAN** or **IRAN**.

FORECAST FOR AUGUST-SEPTEMBER 1986

The largest populations appear to be in northern Eritrean province in Ethiopia, where there have been several reports of dense swarms. If they prove to be Desert Locusts there will probably be heavy gregarious breeding in northern Eritrea and eastern Sudan and a strong likelihood of swarms being produced towards the end of the forecast period. Most will probably move south-east and south along the Dessie escarpment, others may move west and invade Chad while others may move to the Red Sea. In other areas there will be widespread initially low density breeding in India, Pakistan, Yemen PDR, Somalia, possibly in Southern Algeria, Niger, Mali and Mauritania, while in Yemen AR some hopper groups may be produced.

In West Africa there will be initially low density breeding in central and southern Mauritania, the Adrar des Iforas and Tamesna in Mali, Tamesna and Air in Niger, and around Lake Chad in Chad. At the end of the forecast period Chad may be invaded by swarms from the east.

In North-West Africa there may be small scale breeding in southern Algeria.

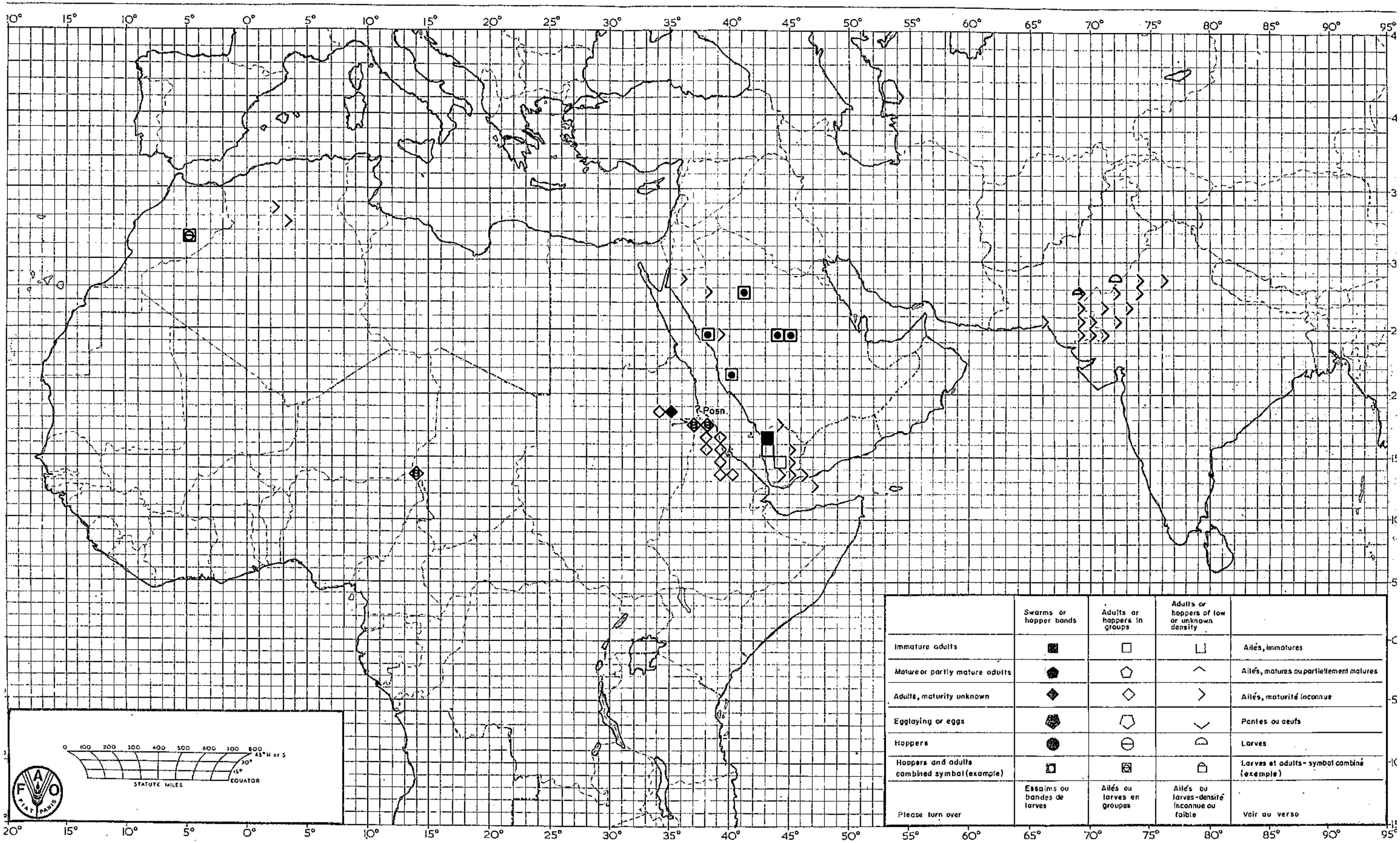
In Eastern Africa there are apparently numerous Desert Locusts swarms in northern Eritrea and gregarious hatching started in late July. As there have been some good rains, breeding is likely to be successful and it may be difficult to control. As a result it is probable that numerous swarms will be formed towards the end of the forecast period. Most are likely to move south-east and then south along Dessie escarpment in late September, others may move towards the Red Sea coast but others may move west across Sudan. In eastern Sudan there will probably be widespread breeding, some of it gregarious. Control should be more effective but the possibility of some swarms forming cannot be excluded. There will be initially low density breeding on the coastal and sub-coastal plaines in northern Somalia.

In the Near East, there will probably be low density breeding in the eastern low lands of the Yemen Arab Republic and in coastal and interior areas of Yemen PDR.

In South-West Asia there will be widespread initially low density breeding in the Tharparkar, Khipro, Nara and Cholistan deserts of Pakistan and in Rajasthan in India.

Rome
5 August 1986

Desert Locust Situation Summary No.94 JUNE-EARLY JULY / JUIN-DEBUT DE JUILLET 1986



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Locusts, other migratory pests and emergency operations group

DESERT LOCUST SITUATION SUMMARY AND FORECAST

NO. 95 JULY-EARLY AUGUST 1986

SUMMARY

The largest populations are probably in Eritrea where there have been numerous reports of swarms, while fifth instar hopper bands have been marching into Sudan. A swarm has also been reported from the Yemen Arab Republic. Breeding has started in PDR Yemen and is probably in progress in Oman. There are widespread adult populations in Pakistan and India where low density breeding has commenced. In Chad hoppers and adults at group density are present around Lake Chad and small populations have been reported from Niger, Mali and Mauritania.

W/S1154

WEST AFRICA

Meteorology

The Intertropical Front reached and even exceeded 20°N by mid-July over Mauritania; over Mali, Niger and Chad it oscillated around 18°N. There were good rains in south-east Mauritania in late July, Aioun el Atrouss recording 22mm on 21 July, but Nema only recorded 7mm during July and the area from Boutilimit northwards was dry. However during the first decade of August Atar received 61mm, Akjoujt 23mm, Boutilimit 25mm, Aioun 41mm, all equal to or above the long-term average. In Mali Tessalit recorded 50mm during July, Kidal 29mm, Aguelhoc 19mm, Tin Essako 18mm and Tin Khar 11mm. During the first decade of August Toumbouctou received 35mm, compared with the long-term average of 25mm. In Niger Agadez recorded 14mm, Anou Arraren 39mm but Iferouane only 0.5mm and Arlit 3mm. There was rain in Tamesna; sandstorms were reported from Mali.

Maximum daily temperatures varied between 35° and 45°C in the interior but were around 30°C in coastal areas.

Breeding conditions

Conditions were suitable for breeding in south-east Mauritania, and parts of Timetrine, the Adrar des Iforas and Tamesna in Mali, in parts of Tamesna in Niger and around Lake Chad in Chad.

Locusts

CHAD

A mixed population of Locusta (75%), Schistocerca (15%) and several species of grasshopper were found at Bol (1328N/1442E) at densities of 40.000 per hectare for hoppers and 10.000 per hectare for adults.

NIGER

Some hoppers were seen near Arlit and Agadez.

MALI

Mature adults were found at densities of 5-10 per hectare over areas of 30-35 hectares in oueds Eleoudj (1928N/0047E) and Tarlit (1937N/0048E). Two mature adults were seen in oued Ratai (1920N/0054E).

MAURITANIA

One mature male was captured at Aioun el Atrouss.

NORTH-WEST AFRICA

Meteorology

The Maghreb was affected by ridges extending from the Azores High and by thundery disturbances but these did not give any significant rain in the Sahara. Maximum temperatures reached 45°C in the Sahara.

Breeding conditions

Conditions were unfavourable for breeding.

Locusts

No locusts were reported from the Region.

EASTERN AFRICA

Meteorology

Over Sudan the ITCZ reached 20°C. As reported in Summary No. 94, rainfall during the first two decades of July improved on the June totals. It again increased during the last decade of July, Gedaref recording 92mm in 3 days and Kassala 64mm in two days. However gaps in the GTS data prevent an assessment of how 1986 rainfall compares with the long-term average.

NOAA/AVHRR imagery up till 10 August suggests that rainfall was below average in the normal summer breeding areas. Heavy rain, however, was reported in eastern and central Sudan on 18 August. There were frequent thunderstorms over the Ethiopian highlands. In Eritrea and Tigrai the rains are said to be good to excellent. No rains were reported from coastal areas along the Red Sea or Gulf of Aden.

Breeding conditions

Breeding conditions do not appear from NOAA/AVHRR imagery to have been particularly favourable in the traditional summer breeding areas in the Sudan or western lowlands of Eritrea. They were unfavourable along the Red Sea and Gulf of Aden coasts.

Locusts

SUDAN

As reported in Summary No. 94 groups of adults were found on 20-22 July at a density of 1500 per hectare over 150 hectares at Khore Arab (1847N/3525E) and at a density of 1000 per hectare over 200 hectares at Khor Habour (1850N/3451E).

In a telex from Khartoum dated 23 August fifth instar hoppers and adults were reported over an area of 2 square kilometres at Molassa (1526N/3635E) and hoppers of different instars over an area of 30 square kilometres at Hafra (1524N/3634E). Control measures were in progress using posioned bait and Diazinon.

ETHIOPIA

There have been numerous reports, many probably substantially delayed, of locusts in Eritrea and Tigrai Provinces. As stated in Summary No. 94 there were reports of "serious" locust infestations from Adigrat (1412N/3932E), Sechet (1327N/3455E), Afdera (1310N/4058E), Mersa Cuba (1615N/3912E) and Algena (1719N/3822E) but the species was not mentioned. At the same time populations of Desert Locust mixed with grasshoppers were found at Ailet (1535N/3909E) and Met Calabat (1540N/3910-3920E).

In late July there were further reports of locusts and serious damage to crops in coastal areas from Massawa to Mersa Gulbub and inland from Cam Cewa to Fil Fil. The species were a mixture of Desert Locusts, Locusta, Phymateus (not Zonocerus as stated in error in Summary No. 94) and unidentified grasshoppers. Similar infestations were reported damaging young crops east of Makalle. Locusts were also reported from Dalol in the Danakil depression.

On helicopter surveys starting on 18 August, locusts were seen at Afabet (1612N/3845E) and hoppers were reported at a density of about 5 per hectare. A DLCO-EA aircraft sprayed hoppers within an area of 2400 square kilometres on the Red Sea coast and two Ministry of Agriculture ground teams sprayed 400 hectares close to the Asmara-Massawa road on the Red Sea coast.

There were no reports from SOMALIA, DJIBOUTI, KENYA, UGANDA or TANZANIA.

RED SEA - GULF OF ADEN

As reported in Summary No. 94, a ship reported "olive brown locusts 1.5 inches (38 mm) long with pink inner leg" from 1648N/4048E at 12:00 hours GMT on 30 June to 1225N/4529E at 10:00 hours on 1 July, i.e. on a front of some 600 kilometres. From the description and the synoptic chart it appears there was a wide-ranging invasion of south-west Arabia from Eastern Africa by grasshoppers, of which Catantops probably predominated.

At 19:00 hours GMT on 11 July a single grey brown locust was found on board a ship at 1219N/4747E at a time when the surface wind was WSW 10 knots (240 degrees, 18 kilometres per hour).

At 11:00 hours GMT on 8 August a ship reported one live locust (5cm, beige,with brown spots) at 1227N/4415E, when the surface wind was westerly 25 knots.

NEAR EAST

Meteorology

The heat low pressure area centred over the Arabian peninsula gave very hot weather, with daily maximum temperatures reaching 50°C. Scattered thunder showers were reported from the Asir mountains, where Al Baha reported 47mm of rain on 1 August, and from the Ataq-Nisab-west Hadhramaut area of PDR Yemen where good rains were reported on 28-30 July.

Breeding conditions

Breeding conditions were favourable in the Ataq-Nisab, west Hadhramaut and coastal areas around Ahwar.

Locusts

KINGDOM OF SAUDI ARABIA

Isolated adults were reported from Taif, Quwaiya, Hariq and Madrakah(2159N/4000E) areas during July.

YEMEN ARAB REPUBLIC

In early August a swarm was reported from Zebid. It was said to have come from across the Red Sea and flew eastwards towards Jebel Wisab (1416N/4336E) and scattered.

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

A medium density population of mature adults was observed copulating and laying at Ash-Shubaykah (1440N/4648E) on 3 August. On the same day a low density population of mature adults was observed in Wadi Qaudah (1546N/4817E).

On 16-17 August medium density mature adults and patches of mixed solitarious and gregarious hoppers of different instars were seen in wadis north of Husn Bilad (1332N/4647E) and in Wadi Maseb (1330N/4632E). Ground control was in progress.

SULTANATE OF OMAN

Scattered congregans maturing adults were found at several localities in the Ramlat al Wahibah (21-22N/58E) during July.

IRAQ was reported clear in July and there were no other reports from the Region.

SOUTH-WEST ASIA

Meteorology

The large multicellular thundery depression, typical of the summer monsoon, persisted over the summer breeding areas, giving very variable rainfall in the second half of July and intermittent medium-heavy rainfall throughout the summer breeding area during the first fortnight of August. In July Barmer recorded 47mm of rain, Jaisalmer 48mm, Jodhpur 149mm, Ganganagar 120mm, Sikar 84mm and Bikaner 146mm.

Breeding conditions

Breeding conditions will have become very favourable.

Locusts

PAKISTAN

Scattered adults were reported from many localities in the Uthal, Mirpurkhas, Bahawalpur, Sukkur areas during the first half of July, the maximum density being 1200 per square kilometre at Charwali Moro (2641N/6936E) on 7 July. In the second half of July the maximum density had reached 2400 per square kilometre at Ghorowari (2641N/6936E) on 21 July. Small numbers of first and second instar hoppers were seen at Ghorowari and Shomonki (2712N/6930E) on 27 July. In the first half of August further scattered adults were seen, the highest density being 1500 per square kilometre at Renhal (2813N/7158E) on 4 August. Small numbers of first and second instar hoppers were seen at Ghorowari and Jangitori (2746N/7005E) on 6 August.

INDIA

As reported in Summary No. 94, scattered locusts were found at 63 localities in Bikaner, Jaisalmer, Jodhpur, Churu, Jalore Nagaur, Mohindergarh and Banaskantha districts during the first fortnight of July, the maximum being 1950 per square kilometre at Banasar (2759N/7246E). One green third instar hopper was found at Agnao (2806N/7247E). In the second half of July maturing and mature adults were found at 65 localities in Jaisalmer, Barmer, Bikaner, Nagaur, Jodhpur and Banaskantha districts, the maximum density being 2000 per square kilometre at Bhalikhal (2512N/7135E) on 27 July. First to third instar solitary hoppers were found at Kanarar (2808N/7249E), Bassi (2657N/7132E) and Phalodi.

There were no reports from AFGHANISTAN or IRAN.

FORECAST FOR SEPTEMBER-OCTOBER 1986

The largest populations are probably in Eritrea Province of Ethiopia, where there have been numerous reports of swarms, and fifth instar hoppers have been entering Sudan from across the border. The scale of breeding is unknown but it is likely to result in the production of swarms. These are most likely to move south-east and south along the Dessie escarpment to the Railway Area and reach the Short Rains breeding area in the Ogaden, adjacent areas of Somalia and perhaps north-eastern Kenya. Others may move into the Red Sea trench. If breeding is also occurring in Sudan and swarms are produced, some could cross the Sahara and reach Morocco in October.

Breeding is likely to become more widespread in Yemen PDR and could result in the formation of groups. Breeding leading to group formation could occur in Oman. Breeding will be widespread in Pakistan and India and could result in group formation. Initially low density breeding will occur in Mauritania, Mali, Niger and perhaps southern Algeria. Group formation could occur in Chad.

In West Africa there will be initially low density breeding in central and southern Mauritania, Timetrine, the Adrar des Iforas and Tamesna in Mali and Tamesna and Air in Niger, but groups could form in October. In Chad breeding will continue and groups will form. Swarms from the east may cross Chad, Niger and Mali in late September or early October.

In North-West Africa there may be breeding in the extreme south of Algeria and some groups may form. If there is substantial breeding in Sudan swarms may reach southern Morocco and the Souss Valley in October.

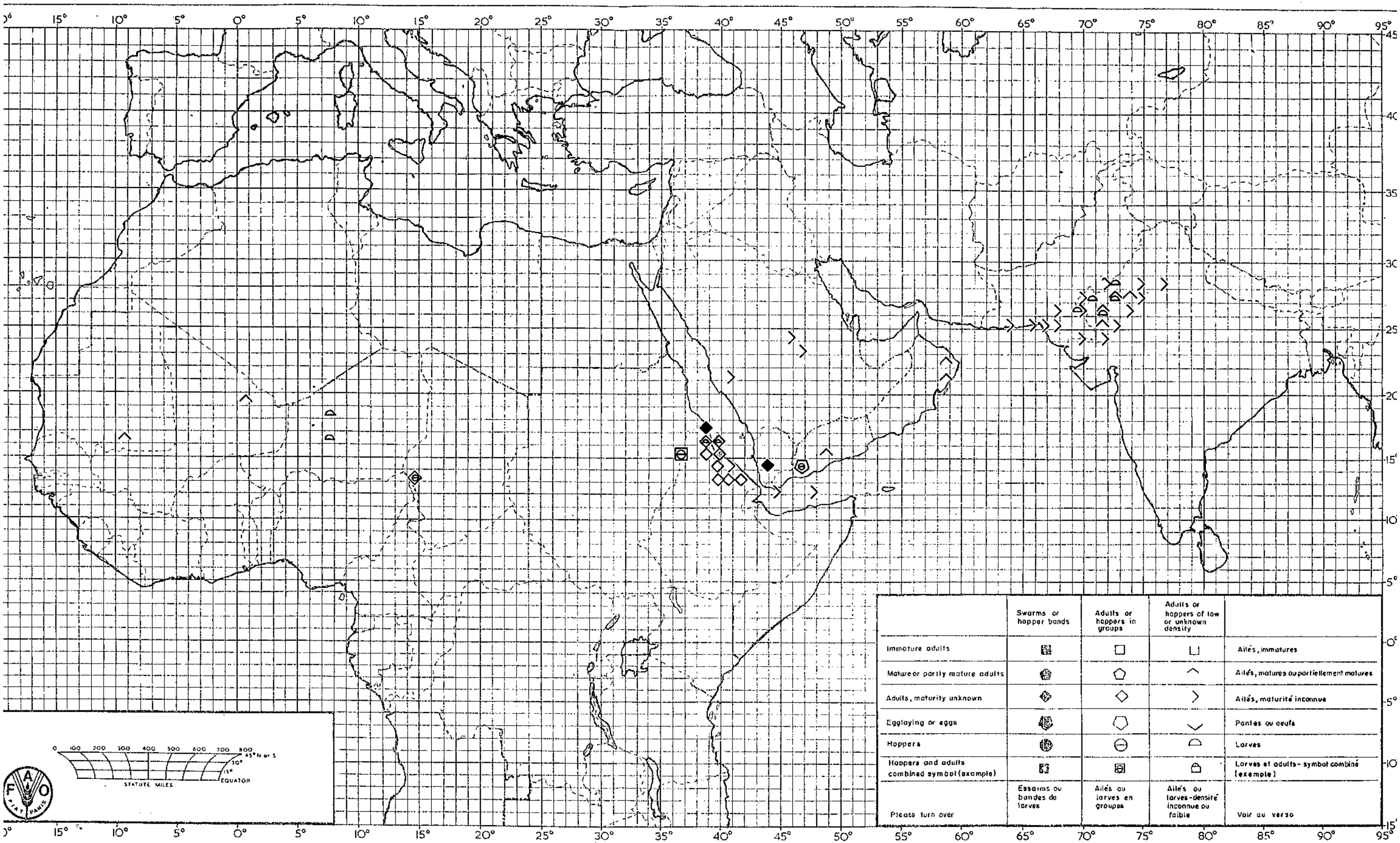
In Eastern Africa gregarious breeding has been in progress in the western lowlands of Eritrea and may have been widespread. Some swarms are likely to form at the beginning of the forecast period. They will probably move south-east and south along the Dessie escarpment and then south-east to the Ogaden and may reach adjacent areas of Somalia and north-east Kenya. Others may move north-east to Red Sea coastal areas. If breeding is also in progress in Sudan and is not adequately controlled further swarms may be produced. If the breeding is in eastern Sudan the swarms will join those from Eritrea, but if it is in the west, the swarms will fly across the Sahara and reach Morocco in October. Congregans breeding will probably occur in coastal and subcoastal areas of northern Ethiopia and Sudan. There may be low density breeding on the northern coastal plains of Somalia.

In the Near East breeding is likely to become more widespread in Yemen PDR and may result in the formation of groups. Breeding has probably commenced in Oman and groups may form. Generally low density breeding will probably occur in the eastern lowlands of the Yemen Arab Republic and may result in the formation of groups. It is possible that some swarms may reach the Tihama of Saudi Arabia and the Yemen Arab Republic at the end of the forecast period.

In South-West Asia there will be widespread breeding in the summer breeding areas of Pakistan and India. If there is a second generation some groups will form and possibly some hopper bands and even some small swarms.

Rome
27 August 1986

Desert Locust Situation Summary No. 95 JULY-EARLY AUGUST/JUILLET-DEBUT D'AOUT 1986



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AGP Division

Locusts, other migratory pests and emergency operations group

DESERT LOCUST SITUATION SUMMARY AND FORECAST

NO. 96   AUGUST - EARLY SEPTEMBER 1986

SUMMARY

There has been widespread breeding in the People's Democratic Republic of Yemen but breeding in Eritrea was on a considerably smaller scale than earlier unconfirmed reports had suggested. There has been breeding in Sudan, Niger, where a swarmlet was controlled, and in India, where aerial and ground control measures were undertaken.

W/S1609

WESTERN AFRICA

Meteorology

The period was characterized by the very northerly position of the Intertropical Front, which reached 24°N over the Western Sahara and Mauritania and lay between 18° and 20°N over Mali and Niger. This northerly position was associated with several "pulls" of the FIT across the Sahara and was due to a weekening of the Azores anticyclone and to the presence of low pressure over North-West Africa and the Western Mediterranean. As reported in Summary No. 95, during the first decade of August, Atar received 61mm, Akjoujt 23mm, Boutilimit 25mm, and Aioun 41mm, all equal to or above the long-term average. During the second decade Agadez reported 14mm and Matam 41mm, while during the third decade Nema reported 48mm, Nara 45mm, Tombouctou 27mm, Kiffa 17mm and Matam 16mm. To the north of 17°N Aguelhoc received 34mm during August, Tessalit 15mm, Tin Zaouaten 10mm, Fanfi 34mm, Bir Moghreim 5mm, Zouerate 1mm, Atar 26mm, Kiffa 50mm, Aioun 23mm, Nouakchott 8mm, Agadez 52mm, Anou Araren 63mm, Iferouane 16mm, Arlit 11mm, and In Abangharit 32mm.

In the first decade of September Agadez recorded 14mm, Kiffa 12mm and Matam 81mm.

Maximum temperatures were in the region of 40°C in the interior and 30°C in coastal areas.

Breeding Conditions

According to NOAA/AVHRR imagery the most favourable breeding conditions were in the Plaine de Talak in western Air in Niger. Other areas where conditions were probably favourable were in wadis draining westward into the Plaine de Talak, eastern Tamesna, Anou Zeggeren extending almost to In Abangharit, north of Malian Tamesna, western Adrar des Iforas, the Tilemsi Valley, central and southern Brakna and Gorgol in Mauritania.

Locusts

NIGER
On 21 September three locally produced swarmlets measuring 6, 15 and 8 hectares were found in Air and were controlled. Earlier, the OCLALAV report for August stated that adults were present at densities of less than one per hectare in Air and Tamesna. An infestation was reported east of Iferouane in Air. According to OCLALAV the reports of hoppers near Arlit and Agadez (Summary No. 95) should be regarded as unconfirmed.

MALI
Fledgling at densities of 100 per hectare were seen in Oued Edjerer (1826N/0205E) over 25 hectares, mixed with <u>Oedaleus johnstoni</u> and <u>Oedaleus senegalensis</u>. Elsewhere adults were present at densities of less than 5 per hectare.

The report of Desert Locusts at Bol in Chad reported in Summary No. 95 is now thought to have referred to <u>Anacridium</u>. There were no reports from MAURITANIA.

NORTH-WEST AFRICA

Meteorology

The weather was generally warm and dry, except for some thundery showers associated with disturbances. The influence of the Azores high was rather weak apart from some travelling ridges of high pressure. On the other hand low pressure cells associated with those over the western Mediterranean were frequent and resulted in the "pulls" of the Inter-tropical Front mentioned under West Africa. They were clearly shown on Meteosat imagery. No significant rain was reported from the Sahara.

Maximum temperatures exceeded 40°C, but were only 20° - 30° along the Atlantic coast of Morocco.

Breeding conditions

According to NOAA/AVHRR imagery conditions were generally unfavourable for breeding in the recession area.

Locusts

MOROCCO and ALGERIA were reported clear in August.

According to a late report from ALGERIA the following control operations were carried out in May in addition to that reported in Summary No. 93: Oued in-Tabechar (2107N/0153E) 400 litres of Malathion were applied over 60 hectares; Oued in-Tabechar (2105N/0157E) 80 litres of Malathion over 10 hectares; Oued in-Tabechar (2101N/0156E) 400 litres of Malathion over 40 hectares.

EASTERN AFRICA

Meteorology

The ITCZ lay to the north of Khartoum up to and including the second decade of September. To the south of the ITCZ there were moderate to good rains, Damazine recording 60mm on 22 August and heavy rains were reported in eastern and central areas on 18 August. In Ethiopia there was strong thermo-convective activity over the highlands which at times extended to the Red Sea coast. On 30 August Djibouti recorded 15mm of rain. A line of cumulonimbus clouds visible on Meteosat imagery marked the position of the Red Sea Convergence Zone. Maximum temperatures ranged from over 40°C in the interior of Sudan to 20 - 25°C in the Ethiopian highlands.

Breeding conditions

According to NOAA/AVHRR imagery conditions were favourable for breeding up to about 15°N across Sudan, extending to 16°N in Darfur and Kassala

Provinces. They were also favourable in the Musmar area of Red Sea Province. Conditions continued to be favourable in the highlands of Northern Ethiopia, in the Tokar delta, in Southern Eritrea, parts of Djibouti and probably along the northern coastal plains of Somalia east of Berbera.

Locusts

SUDAN

In Kassala Province, fifth instar hoppers marching out of Eritrea and adults were controlled over 2 square kilometres at Molasse (1526N/3635E) and hoppers of different instars were controlled 30 square kilometres at Hafra (1529N/ 3634E) as reported in Summary No. 95. On 28 August further infestations of all stages were found at Jebel Tamarat (1527N/3637E) and Jebel Kabon Sherifi (1529N/3631E). Baiting and spraying commenced against marching groups of late instar hoppers and adults. By 16 September 90% of the infested area had been cleared.

In the Red Sea Province around Musmar groups of copulating adults were found at two localities over 18 square kilometres and medium density third to fourth instar hoppers at one locality during the first decade of September.

In Nile Province low density adults were found at Wad Hamid (1630N/ 3250E), Qoz El Harr and Bir El Melih in the Shendi area in the first decade of September.

In Northern Kordfan Province a scout reported solitary mature adults at El Hobagi (1558N/3040E) in the first decade of September.

In North Darfur Province small numbers of adults were found around El Fasher (1343N/2520E) in the second decade of September.

ETHIOPIA

On 7-8 August a DLCO-EA aircraft sprayed within an area of 2,400 square kilometres of green vegetation on the Red Sea coast between Emberemi and Cam Cewa, north-west of Massawa, approximately two-thirds barrier spraying and one-third target spraying. Later, a helicopter survey found only 5-7 hoppers and immature adults per hectare in the area. Ground teams sprayed 800 ha along the Red Sea and 700 ha along the Asmara - Massawa road. At Ghinda adults were reported at 150 per square meter.

Following reports of Desert Locusts from the Gash and Setit region a helicopter survey was flown from Asmara to Tessenei and a ground survey was made around the Aligider State Farm but no Desert Locusts were seen.

As reported in Summary No. 95, a telex from Khartoum reported fifth instar hoppers and adults marching out of Eritrea west of Sabderat and later bands of mixed instar hoppers in the same area.

The Sudan Locust Report No. 8 of 11 September reported Desert Locust hoppers in Wadi Saua (1545N/3656E - 1545N/3659E).

Subsequently there have been no further reports of Desert Locusts in Ethiopia and it appears that the infestations around Sabderat were rather restricted in extent.

There were no reports of Desert Locusts from DJIBOUTI, SOMALIA, KENYA, UGANDA or TANZANIA.

NEAR EAST

Meteorology

The large heat low pressure area persisted over the Arabian peninsula and the ITCZ and air-sea-land interactions resulted in some significant thermoconvective rain over highlands of the Hijaz, the Yemen Arab Republic, the United Arab Emirates and Oman and, from 10 August, along the Red Sea. Daily rainfall totals recorded by the GTS included 47mm at El Baha on 1 August, 29mm at Sur on 11 August, 15 and 20mm respectively at Salalah and Saiq on 27 August. The Red Sea Convergence Zone was generally at about 15°N.

Breeding conditions

As reported in Summary No. 95, there were good rains in the Ataq-Nisab-West Hadharamaut area on 28-30 July which gave rise to favourable breeding conditions. Similar conditions also developed in the Rub al Khali at about 17°N/48°E, 19°N/52°E and 21-22°N/53-54°E.

Locusts

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

As reported in Summary No. 95 a medium density population of mature adults was observed copulating and laying at Ash-Shubaykah (1440N/4648E) on 3 August. Later control operations were in progress over 40 square kilometres in Wadi Therab (1433N/4706E). Also on 3 August a low density population of mature adults was seen in Wadi Qaudha (1546N/4817E). In early September control was in progress against hoppers in this area. On 16-17 August medium density mature adults and patches of mixed solitarious and gregarious hoppers of differend instars were seen in Wadis north of Husn Bilad (1332N/4647E) and in Wadi Maseb (1330N/4632E). Ground control was in progress.

In early September there were reports of locusts at various densities from eastern PDR Yemen. Ground survey teams found adults at high densities for 60 kilometres in Wadi Sa'af (16°N/51°E) where there had been no rain, and some breeding near Hayrut (1720N/5242E). Ground control was in progress.

YEMEN ARAB REPUBLIC

A small swarm was seen at Zebid on 10 August, which later flew east and scattered in the foothills. On 18 and 25 August scattered mature adults were found in Wadis Mawr, Hayran, Habl and at Abs at densities of 5-15 per 100 metres traverse.

KINGDOM OF SAUDI ARABIA

According to a late report, very small groups of adults were controlled in Wadi Dawasir in July using 360 litres of Fenitrothion, and scattered small groups of adults totalling 650 hectares were controlled in Quwaiya in July and August using 250 litres of Fenitrothion and 250 Kg of BHC.

OMAN was reported clear in June.

SOUTH-WEST ASIA

Meteorology

The vast low pressure area over India maintained a moist airstream over the summer breeding area during August. There was widespread moderate to heavy rain during the first half of the month, Bahawalpur recording 133mm, Sukkur 61mm, Bikaner 41mm on 7 August and Chhor 48mm on 8 August. The second half of the month was generally dry. There were moderate rains in northern Cholistan on 11 September and heavy rains on 13-14 September.

Breeding conditions

As a result of the widespread moderate-heavy rains in late July and early August there were favourable breeding conditions in most parts of the summer breeding area.

Locusts

PAKISTAN

Scattered adults were reported from 53 localities in the Uthal, Mirpur Khas, Sukkur, Bahawalpur and Rahimyar Khan areas during the first half of August, the maximum density being 1,500 per square kilometre at Renhal (2813N/7158E) on 4 August. Small number of first and second instar hoppers were seen at Ghorowari and Jangitori on 6 August.

In the second half of August scattered adults were seen at 54 localities in the Uthal, Mirpur Khas, Sukkur, Bahawalpur and Rahimyar Khan areas, the maximum density being 2,850 at Lundion (2650N/6836E) on 26 August. First to fourth instar hoppers were found in low lying areas of green vegetation in Khenju, Tajjal and Kadenwari in the Nara desert, in Islamkot in the Tharparkar desert and at Renhal in Cholistan, the maximum density being 15 per bush at Pahara (2642N/6848E) on 26 August.

INDIA

Scattered adults were reported from 82 localities in Bikaner, Jaisalmer, Barner, Jodhpur, Ganganagar, Jalore and Banaskantha districts during the first forthnight of August, the maximum density being "countless" at Surjara (2804N/7249E) on 7 August. Small patches of hoppers and some fledgings were found at Surjara, Khari (2759N/7258E) and Bachasar (2758N/7311E) on 6-7 August at a maximum density of 100 hoppers per bush. Control operations were conducted from 8 to 15 August using 4,650 kg of 10% BHC dust. The total area treated was 186 hectares.

In the second half of August dusting operations were mounted in nine localities in Bikaner district using 26,099 Kg of 10% BHC dust. In addition barrier spraying by air was undertaken against first to fourth instar hoppers at two localities in Jaisalmer district using 1,500 litres of 18% Dieldrin to treat 3,000 hectares. A further 100 litres were applied by exhaust nozzle sprayers to treat 1,000 hectares. Solitary first to fourth instar hoppers were also found at two other localities. Scattered adults were found at 80 localities in Bikaner, Jaisalmer, Jodhpur, Nagaur,Ganganagar and Churu districts, the maximum density being 1,500 per square kilometre at Delana (2834N/7338E) on 17 August.

AFGHANISTAN was reported clear in August.

FORECAST FOR OCTOBER-NOVEMBER

Congregans breeding has occurred in Niger, Sudan, Ethiopia,Yemen PDR and India. Control operations are in progress but some small swarms may be produced. Most will move towards winter-spring breeding areas. Breeding is likely to commence in coastal areas on both sides of the Red Sea and Gulf of Aden.

In West Africa undetected congregans breeding resulted in the production of at least one swarmlet in Air in mid-September which has been controlled but others may have been produced. These may breed again locally or emigrate north-west across the Sahara. Congregans breeding is also likely to occur in the Adrar des Iforas, Tamesna of Niger and Mali, the Tilemsi Valley and Timetrine and in central-southern Mauritania.

In North-West Africa considerable number of adults may reach central and western Algeria and possibly south-eastern Morocco if populations in Niger are not adequately controlled. They could include a few swarmlets or, more likely, groups. A substantial invasion from Sudan is unlikely.

In Eastern Africa gregarious breeding in Western Eritrea has apparently been controlled and medium density breeding in Sinkat district is being controlled. Congregans breeding may be rather widespread in Sudan, extending westwards to Darfur. Any adults produced in western Sudan , which may include groups, are likely to disperse crossing the Sahara; most of those produced in the east, which may also include groups, are likely to move to the Red Sea coast of Sudan and Ethiopia where they will start to breed but some may move south-east towards the Horn of Africa. Adults may reach the northern coastal plain of Somalia from Arabia and could start to breed, if there are early winter rains.

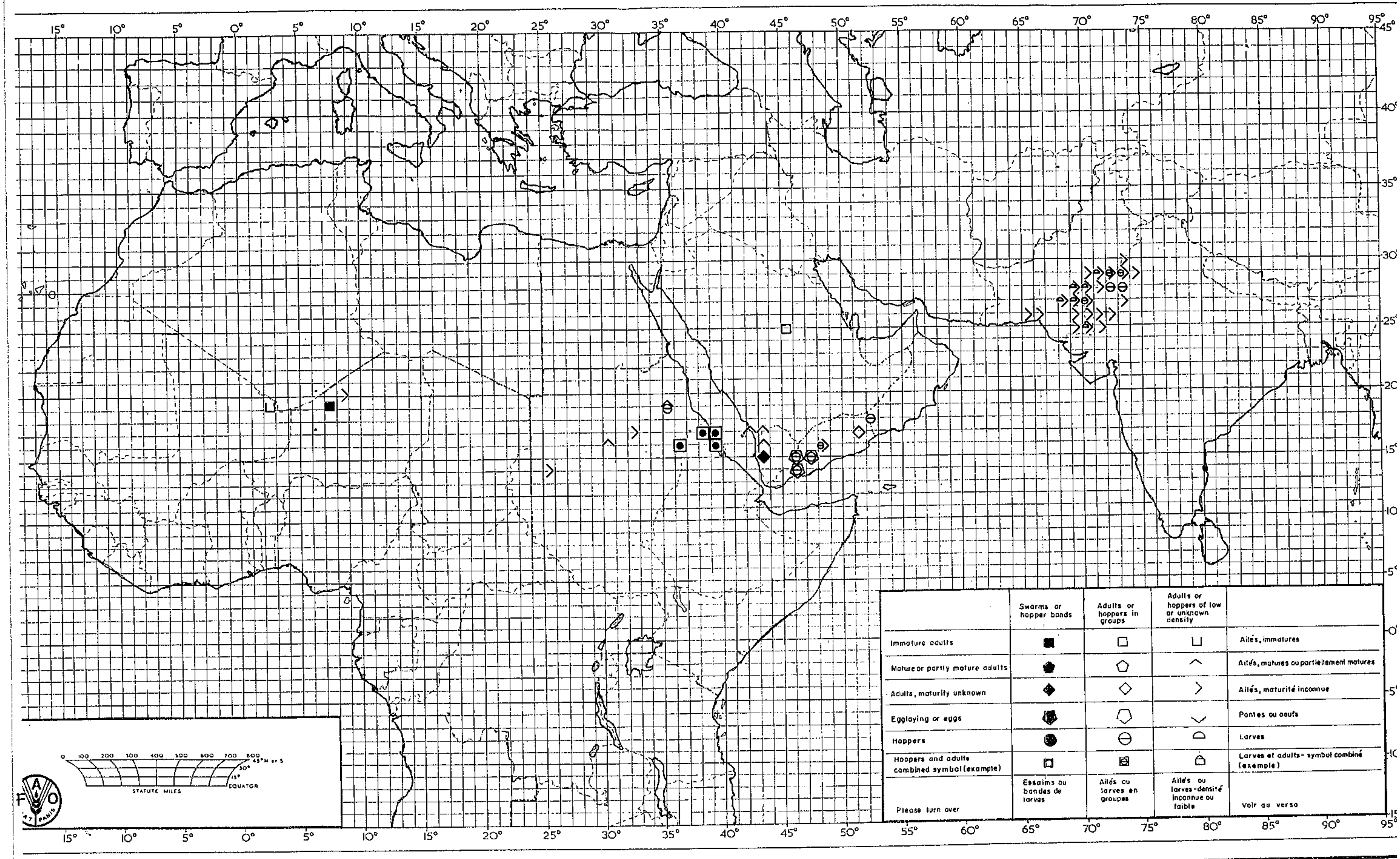
In the Near East considerable numbers of adults, possibly including one or two small swarms may be produced in PDR Yemen, where there has been rather widespread breeding. Breeding may continue in coastal and some interior areas of PDR Yemen and is likely to spread to the Tihama of Yemen AR and the southern Tihama of Saudi Arabia. The latter area may also be invaded by adults from across the Red Sea but these are unlikely to include swarms. Scattered adults and possibly some groups may reach Oman and the

United Arab Emirates from the east.

In South-West Asia congregans breeding has occurred in Rajarthan close to the Pakistan border and near Bikaner. Unless adequately controlled groups of adults and even small swarms could be produced. If there is a second generation of breeding hopper bands are likely to form and further swarms are likely to be produced towards the end of the forecasting period.

Rome
29 September 1986

Desert Locust Situation Summary No. 96 AUGUST - EARLY SEPTEMBER / AOUT - DEBUT DE SEPTEMBRE, 198



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DESERT LOCUST SITUATION SUMMARY AND FORECAST

NO. 97 SEPTEMBER - EARLY OCTOBER 1986

SUMMARY

There has been widespread congregans breedirg in Mali, Niger, Sudan, Ethiopia, Yemen PDR, Oman and India and a number of small swarms have been produced. Control operations have been mounted in all areas and considerable numbers of adults are likely to reach winter-spring breeding areas in North-West Africa and around the Red Sea and Gulf of Aden.

W/S1837

WESTERN AFRICA

Meteorology

During September the Intertropical Front reached 24°N over the Western Sahara and Mauritania but only 17°N over Chad. Low pressure over the Western Mediterranean weakened the effect of the Azores anticyclone and resulted in several pulls of the FIT across the Sahara. There were much above average rains over southern and northern Mauritania, western Mali and extensive areas of Niger, Kiffa recording 23mm on 25 and 26 September respectively. By late September the FIT had moved south to around 15-16°N over Mauritania, Mali and western Niger and to 14°N over eastern Niger, and the harmattan became established over the main breeding areas.

Breeding Conditions

According to NOAA/AVHRR imagery there were good breeding conditions in the Tilemsi valley at 18-19°N, and in eastern Tamesna and western Air in Niger.

Locusts

As reported in Summary No. 96, three mature swarmlets measuring 6, 15 and 8 hectares were found in Air by a joint OCLALAV-Algerian ground survey team on 21 September. Subsequently, the following populations/control measures have been reported.

On 29 September, 1,000 hectares of gregarious locusts were controlled using Dieldrin 100 Km west of Iferouane by OCLALAV, and 900 hectares of laying adults were found 80 km north-east of Arlit. Aerial and ground surveys were in progress. On 30 September laying swarmlets were reported 110 km east of Iferouane and Dieldrin was applied by exhaust nozzle sprayer against laying swarms measuring 29, 16 and 30 hectares at Oued Aghli (1901N/0740E), Tin Ekert (1902N/0738E) and Assoliak (1954N/0745E). On 4-6 October 8,800 hectares laying adults at densities of 1-5 per square metre were treated with Dieldrin by air 60 km north-west of Iferouane. At Tagora (1755N/0810E) 1,00 hectares of copulating and laying adults and second to fourth instar hoppers at densities of 20-30 per square meter sprayed with Dieldrin using exhaust nozzle sprayer.

In Tamesna up to 8 October, mature adults were found over 3 hectares at Arake Melen (1912N/0550E), mature and immature adult were found over 5 hectares at Ekecheker (1910N/0546E). On 13-14 October 800 hectares of first and second instar hoppers and grey and yellow adults at densities of 50-100/m^2 were sprayed in these areas. On 8 October mature and immature adults were found at densities of 200-300 per hectare over 600 hectares at Aghlen Niklan (1756N/0536E) and were being controlled. In the week ending 16 October, hoppers were seen over a small area at Mamanat, 80 kilometres north of Arlit and young hoppers and young adults at densities of 1,500-4,000 per hectare were treated over 400 hectares at Bogorat (1916N/0742E)

MALI

According to a telex dated 13 October a copulating and laying swarmlet of 5 ha was seen in Oued Edjerer de Tamaradjant (1927N/0210E) 45 km west of Tin Esako. Five other mature swarmlets all smaller than 2.5 ha were seen 100 km north-east of Tin Esako at about 1905N/0305E. Hatching was in progress. By 20 October 3,000 hectares had been treated, of which 1,800 hectares were in one area.

Adults and first to third instar hoppers were also found in the Bouressa Basin, Timetrine and in southern and western Adrar des Iforas at densities of 100-250 per hectare.

MAURITANIA

There has been a report of Desert Locusts at a density of 5 per square meter over 300 hectares in south-west Mauritania.

CHAD

Scattered adults were captured in several localities during August and September.

NORTH-WEST AFRICA

Meteorology

The Maghrab was laternately under the influence of weak ridges and of disturbances of Atlantic origin. Meteosat imagery showed several cases of cyclogenesis resulting from the interaction of the depressions and cold fronts. One on 22 September extended to southern Libya. According to the GTS daily rainfall totals generally did not exceed 5mm in the first three weeks of September. In the last week of September and the first week of October there was frequent rainfall and on 30 September Ghardaia reported 113mm, 22 times the mean of September.

Breeding Conditions

According to NOAA/AVHRR imagery the only area within the recession area which provided good breeding conditions was Kufra oasis.

Locusts

No locusts were reported from the Region.

EASTERN AFRICA

Meteorology

The ITCZ moved from north of Khartoum in early September to around 10^{o}N over Sudan and to around 6^{o}N over the Horn of Africa on 20 October. To the north of the ITCZ the air was hot and dry while to the south there was thermoconvective rain particularly over the Ethiopian highlands and which at times extended to the southern Red Sea.

Breeding Conditions

According to NOAA/AVHRR imagery conditions were favourable for breeding up to about 15°N across Sudan, extending to 16°N in Darfur and Kassala provinces in early September, retreating southwards in late September and early October. The northern coastal plains of Somalia were reported to be dry in eartly October.

Locusts

SUDAN

In the Eastern Region, as reported in Summary No. 96, control operations against late instar hoppers and adults east of Kassala were virtually completed by mid-September. In mid-October isolated adults were present in the Gash delta (15N/36E) and hatching had occurred in Wadi Odi (16N/36E). Control operations were still continuing in Khors Talguharai and Arab in Musmar district. There was also an unconfirmed report of Desert Locusts from the Tokar Delta.

In the Northern Region, low density adults and egg-fields have been found at Quz Abu Dulur (1650N/3310E). Isolated copulating adults were seen at three localities east of the river Atbara.

In the Western Region, first to fourth instar hoppers were present at 11 localities totalling 8,500 hectares in the Mughanoss area (1411N/3048E); first to fifth instar hoppers were present in 10 localities totalling 16,000 hectares in the Umm Seiyala area (1424N/3111E); large areas in the Hamrat El Wiz area (1409N/3008E) infested by first and second instar hoppers. Ground control measures were in progress and aerial spraying due to start second half of October. In Northern Darfur, scattered adults were reported from the El Fasher area.

ETHIOPIA

As reported in Summary No. 96 hopper bands of mixed instars were marching into Sudan east of Kassala, but the extent of this infestation was unknown. Hoppers were reported in Wadi Saua (1545N/3656E - 1545N/3659E) in early September.

Helicopter and ground surveys located the following populations in the period 15-25 September:

- Aligider-Tessenei: 100 adults per hectare in natural vegetation over an unspecified area. this area also contained grasshoppers and was ground sprayed in late September.

- Agordat: 30 adults per hectare over unknown area; this area also contained grasshoppers and was ground sprayed in late September.

- Barentu: scattered adults

In late September there was an unconfirmed report of a swarm in northern Eritrea.

No Desert Locusts were reported during period 1-10 October.

SOMALIA

Ground surveys found scattered adults at several localities between Bossaso (1114N/4900E) and Jarub (1050N/4546E), the maximum density being 65 in one kilometre at 1107N/4738E.

There were no reports from DJIBOUTI, KENYA, TANZANIA or UGANDA.

NEAR EAST

Meteorology

The large heat low pressure area persisted over the Arabian peninsula and there were thermoconvective rains over the highlands of the Hijaz and the Yemen Arab Republic.

Breeding Conditions

Conditions were reported to be favourable for breeding on the Tiliama of the Yemen Arab Republic and in some areas east of Aden. The Saudi Tihama was reported to be dry.

Locusts

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

As reported in Summary No. 96, there were report of locusts at various densities from eastern PDR Yemen in early September. Ground survey teams found adults at high densities for 60 kilometres in Wadi Sa'af, where there had been no rain, and some breeding near Hayrut. Ground control was in progress.

During the week 20-27 September further infestations of mixed solitarious and gregarious second to fifth instar hoppers and young adults were found in Wadi Al-Rahabh (1354N/4725E) and copulating adults were found at high densities at Musalam (1355N/4724E). On 19 September a swarm laid eggs over 0.5 square kilometres at Irqah (1339N/4716E). Low density copulating and laying adults were observed in Wadi Maseb (1334N/4633E) on 28 September. Control was in progress using Dieldrin and Fenitrothion. By mid-October there were patches of hoppers at Irqah, and one hopper band was seen in Wadi Maseb. The gross infested area was estimated at 750 square kilometres and was being controlled.

OMAN

In a telex dated 14 October, it was stated that ground surveys had located hoppers and adults forming groups in the Sharqia.

Earlier, mature adults were reported in cultivations in Bureimi at densities of 30-40 per field (2-3 acres) in July, and a few adults were reported in Wadis Sal and Mur and at Beni Bu Ali (22-23N/58-59E) in August.

SAUDI ARABIA

There was an unconfirmed report of a swarm in Saudi Arabia.

IRAQ was reported clear in August and September. No other reports were received from the Region.

SOUTH-WEST ASIA

Meteorology

High pressure over the Himalayas extended southwards, marking the transition from the summer monsoon to the winter monsoon.

There was only scattered rainfall in the Summer breeding area in the first half of September and none was reported in the second half of the month.

Breeding Conditions

Vegetation was reported to be drying in the summer breeding area in the first half of September. However conditdions were still suitable for laying locally.

Locusts

PAKISTAN

On 17 September a 4 square kilometre mature swarm was reported at Kanewari (2625N/6958E) and a loose group was reported from Samrahu (2627N/6958E) on 19 September. Small pockets of hatchings over 2 square kilometres were controlled on 29 September using 50 kg of 12.5% BHC dust.

In the first half of September acattered adults were found at numerous localities in the Uthal, Mirpurkhas, Sukkur, Bahawalpur and Rahimyar Khan areas, the maximum density being 3,750 per square kilometre at Renhal (2812N/2158E) on 11 September. Low density hoppers were found at 9 localities in Sukkur and Bahawalpur areas in the first half of September.

INDIA

Small patchy infestations of solitaricolor-gregaricolor hoppers of all instars and fledglings were controlled by air and ground at several localities totalling 10,091 hectares in Bikaner and Jaisalmer districts using 19,050 kg of BHC 10% dust, 1,500 litres of 18% Dieldrin and 3,500 kg of Malathion ULV during the first half of September. In addition low density adults were seen at 113 localities in Bikaner, Ganganagar,Barmer, Jaisalmer, Judhpur, Churu and Banaskantha districts. Scattered hoppers were also found in four localities in Bikaner and Jaisalmer districts.

There were no reports from AFGHANISTAN or IRAN.

FORECAST FOR NOVEMBER - DECEMBER 1986

There has been widespread congregans breeding in the summer breeding areas in Mali, Niger, Sudan, Ethiopia, Yemen PDR, Oman and India and a number of small swarms have been produced. Control operations have been mounted in all areas but considerable number of adults are likely to reach the winter-spring breeding areas.

In West Africa there may be further congregans breeding in restricted areas in Air and Tamesna in Niger and in Tamesna, Adrar des Iforas, the Tilemsi Valley and Timetrine in Mali and a few small swarms may be produced unless the breeding is controlled. Some adults are likely to reach Mauritania but they are unlikely to breed.

In North-West Africa considerable number of adults may reach central and western Algeria and south-eastern Morocco from West Africa, possibly including some groups. There will now be no invasion from Sudan.

In Eastern Africa breeding in the interior of Sudan will terminate and increasing number of adults including groups will appear in the Red Sea coasts of Ethiopia and Sudan and will start to breed. Increasing number of adults , which could include groups from Arabia, will occur on the northern coastal plains of Somalia and will start to breed. It is now unlikely that there will be any breeding in the Short Rains breeding area.

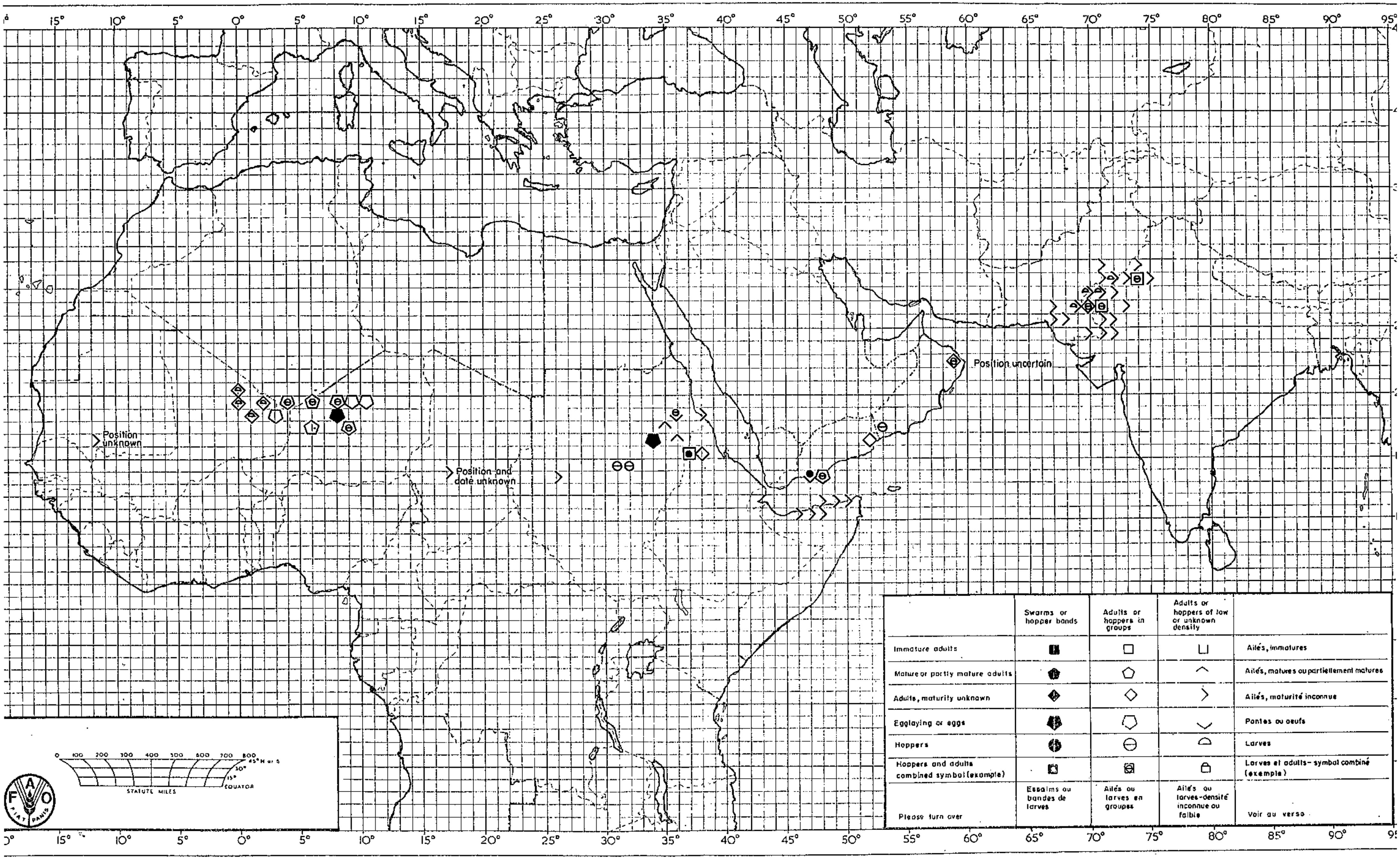
In the Near East, considerable number of adults, possibly including one or two small swarms may be produced in PDR Yemen. Congregans breeding may continue in coastal and some interior areas of PDR Yemen and is likely to spread to the Tihama of Yemen AR and to the southern Tihama of Saudi Arabia. Breeding will probably end in Oman and any escapes which could include groups are likely to move to south-west Arabia.

In South-West Asia breeding in the summer breeding areas will terminate and control should prevent the formation of any swarms. Increasing number of adults will reach the winter-spring breeding areas in Baluchistan of Pakistan and Baluchistan-Seistan of south-east Iran.

Rome
22 October 1986

1986

Desert Locust Situation Summary No. 97 SEPTEMBER-EARLY OCTOBER/SEPTEMBRE DEBUT D'OCTOBR



	Swarms or hopper bands	Adults or hoppers in groups	Adults or hoppers of low or unknown density	
Immature adults				Ailés, immatures
Mature or partly mature adults				Ailés, matures ou partiellement matures
Adults, maturity unknown				Ailés, maturité inconnue
Egglaying or eggs				Pontes ou oeufs
Hoppers				Larves
Hoppers and adults combined symbol (example)				Larves et adults- symbol combiné (exemple)
Please turn over	Essaims ou bandes de larves	Ailés ou larves en groupes	Ailés ou larves-densité inconnue ou faible	Voir au verso

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AGP Division

Locusts, other migratory pests and emergency operations group

DESERT LOCUST SITUATION SUMMARY AND FORECAST

No. 98 OCTOBER - EARLY NOVEMBER 1986

SUMMARY

The situation is potentially more threatening than at any time since late 1978.

As a result of good late summer rains, there has been widespread breeding in the summer breeding areas of Mauritania, Mali, Niger, Sudan, PDR Yemen, Oman, Pakistan and India. A number of swarms have been produced despite intensive control operations and considerable number of adults will reach winter breeding areas on both sides of the Red Sea and start to breed. Some swarms may reach northern Arabia and the countries immediately to the north.

Late information

High density immature gregarious adults found along sea-shore between Jeddah and Badr on 21 November.

WEST AFRICA

Meteorology

In early October the Intertropical Front (FIT) was at 15°-16°N over Senegal, Mauritania, Mali and Western Niger and at about 14°N over eastern Niger and Chad. After the widespread but patchy rain in September, October was much drier to the north of 15°N. However there were showers in Malian Tamesna, the Adrar des Iforas and in Inchiri, Adrar and Tagant in Mauritania. On 20 October there was an important pull of the FIT along the Mali-Algeria-Morocco axis with a vortex typical of the interaction between the tropics and middle latitudes. In the last decade of October the harmattan strengthened, producing sandstorms, particularly in northern Mali.

There was still some instability in early November but according to the GTS rainfall did not exceed 3 mm, at Tidjikja on 5 November.

Breeding conditions

According to reports from joint OCLALAV/Morocco ground survey teams, conditions were favourable for breeding in Mauritania north of 18°N, and NOAA/AVHRR imagery indicates the presence of green vegetation in southern Malian Tamesna and in parts of southern Tamesna in Niger.

Locusts

MAURITANIA

According to a late report a small group of adults was seen about 45 km north-east of Kaedi on about 10 October.

A joint OCLALAV/Moroccan ground survey mission surveyed the area south of 18°N and west of 14°W from 18 to 29 October. Immature and mature adults and solitarious hoppers of all instars were widespread at densities of 4-300 per hectare. At Bir El Barka (1703N/1520W) adults were present at a density of 400 per hectare over a small area.

In November ground surveys revealed the presence of much heavier infestations of hoppers, adults and eggs in the area 1800-1910N, 1130-1430W and gregarious populations in the area 1820-1850N, 1330-1400W. The total area needing control was estimated at 85,600 hectares; of which it is only possible to treat 20,000 hectares by ground teams. On 17 and 18 November ground teams treated 1,200 hectares using 1.000 l Fenitrothion 50 and an aircraft treated 2,400 hectares using 900 l Malathion 95%.

MALI

As reported in Summary No. 97, a copulating and laying swarmlet of 5 hectare was seen in Oued Adjerer de Tamaradjant (1927N/0210E). Five other swarmlets all smaller than 2.5 hectares were seen 100 kilometres north-east of Tin Esako at about 1905N/0305E. Hatching was in progress. By 20 October 3,000 hectares had been treated, of which 1,000 hectares were in one area.

A telex dated 3 November confirmed the presence of hopper bands and swarms in numerous localities ranging from hundreds to thousands of hectares and totalling 30,000-40,000 hectares in the area 17-18 degrees N and 1-2 degrees E. Most individuals had already fledged and several small swarms of 100,000 individuals per hectare were seen. Day and night departures are expected during first 15 days of November and some expected to augment late breeding around Tin Esako.

In southern Timetrine weakly pigmented hoppers were present at densities of 2 per square metre. In the Bouressa basin immature and mature, copulating adults were found at densities of up to 200 per hectare. By 30 October a total 8,905 hectares had been treated using 1,293 litres of Fenitrothion 1000 and 930 litres of 20% Dieldrin. By mid-November over 10,000 hectares had been treated.

NIGER

In Air, as reported in Summary No. 97, on 4-6 October 8,800 hectares of laying adults at densities of 1-5 per square metre were treated with Dieldrin by air 60 kilometres north-west of Iferouane. At Tagora (1755N|0810E) 1,000 hectares of copulating and laying adults and second-fourth instar hoppers at densities of 20-30 per square metre were sprayed with Dieldrin by exhaust nozzle sprayer. In the week ending 16 October, hoppers were seen over a small area at Mamanat, 80 kilometres north of Arlit and young hoppers and young adults at densities of 1,500-4,000 per hectare were treated over 400 hectares at Bogorat (1916N|0747E). By the end of October 16,300 hectares of mature adults and hoppers of all instars including first and second instar bands had been treated by air and 517 hectares by ground spraying. Some of the adults were apparently locally produced and others apparently came from the east. By the end of the month there were large numbers of scattered adults which moved probably concentrate in areas of green vegetation.

In Tamesna mature adults were seen over 3 hectares at Anou Melen (1912N|0550E) and mature and immature adults over 5 hectares at Ekecheker (1910N|0546E) up to 8 October. On 13-14 October 800 hectares of first and second instar hoppers and grey and yellow adults at densities of 50-100 per square metre were sprayed in these areas. On 8 October mature in immature adults were found at densities of 200-300 per hectare over 600 hectares at Aghlen Niklen (1756N|0536E) and were being controlled.

A ground survey of northern Tamesna from 15 to 29 October revealed hoppers of all instars and immature and mature adults in numerous patches of green vegetation 30-100 kilometres south-west of Assamaka. There were also first and second instar hopper bands. By the end of October 3,400 hectares had been treated with Fenitrothion 1000 at 250 gr active ingredient per hectare.

There were also immature adults in almost all areas of green vegetation west of In Abangharit at densities of less than 10 per hectare.

There have been no confirmed reports from CHAD.

NORTH-WEST AFRICA

Meteorology

As reported in Summary No. 97 there were several examples of cyclogenesis and frontogenesis over the Maghreb from the beginning of October resulting in significant rainfall. The rainiest day was 19 October when the pull of the FIT mentioned under West Africa gave 17 mm at Adrar and 33 mm at Beni Abbes. Later the influence of the Azores anticyclone predominated over Morocco, Algeria and Tunisia while there were thundery cold fronts over Libya. Rainfall estimates from Meteosat imagery suggest there was substantial rainfall over Algeria during October.

Breeding conditions

Following good rains in September, annual and perennial vegetation was well developed in wadis and wadi outflows.

Locusts

ALGERIA

According to late reports poisoned BHC bait was applied against mature adults at three localities totalling 70 hectares south of El Golea in early August.

In September there were reports of solitary adults in two patches totalling 2.5 hectares at In Guezzam and small numbers of adults at six localities in the extreme south of the country.

EASTERN AFRICA

Meteorology

In Sudan the heavy rains of September continued into the first decade of October. The ITCZ lay at about 10°N by the end of the second decade and some localised thermoconvective activity continued up to that latitude until early November. In Ethiopia there were thunderstorms over the highlands during the first and third decade of October. In Somalia north-easterly winds became established over northern areas and, as pressure fell, they penetrated further south.

Along the Red Sea, Port Sudan recorded 7 mm on 23 October and there was further light rain on the following days.

Breeding conditions

Breeding conditions were favourable in many of the traditional summer breeding areas, extending from Darfur to Kassala and Red Sea Provinces. In late October wild vegetation was drying and crops were being harvested but green vegetation persisted in many areas. The Tokar delta was favourable for breeding due to earlier flooding. The northern coastal plains of Somalia were generally dry.

Locusts

SUDAN

During October Desert Locust infestations became much more extensive and were found in all northern and central provinces. The presence of several thin density swarms was reported from 20 October.

Red Sea Province

Control operations against 18 square kilometres of hoppers and adults in Khors Talguharai (1817N/3556E) and Ariab (1839N/3557E) were completed using 120 litres of Diazinon E.C. Dense second, third and fourth instar hopper bands were found over 60 square kilometres in Khors Hambokeib (1713N/3603E) and Humei Acteb (1709N/3602E) in late October. Ground control operations using Fenitrothion EC and Diazinon were in progress and an aircraft was being sent to the area.

In the Tokar delta copulating adults were found in five blocks totalling 1,120 hectares at densities of up to 1,500 per hectare in early November.

Kassala Province

In the Gash delta aerial and ground control was in progress against hopper and adult infestations at Metatib (1603N/3612E) and Tambai (1553N/3607E).

Hopper infestations of all instars were being ground controlled over an area of 3,000 square kilometres in the Khor Odi, Hamashkureib (1650N/3630E), Ungwazeri (1655N/3603E) and Gadamai (1707N/3603E) areas.

White Nile Province

In the Ed Dueim district hoppers of all instars and adults infested a total area of some 90,000 hectares causing up to 25% crop damage. By 12 Novemeber a total of 17,800 hectares had been treated by air and 3,700 hectares had been treated by ground units using at least 13,300 litres of concentrated pesticides and 113,000 kg of poisoned bait.

Northern Province

In the Ed Dabba area first to third instar hopper bands were being controlled over an area of 6 square kilometres in the Baiyuda (1733N|3207E) area and first to third instar hopper groups were being controlled at Abu Sedair (1910N|3110E).

Nile Province

In the Ed Damer area there were numerous groups of first to third instar hoppers some starting to form marching bands to the west of the Nile (17°N,32-33°E) and at Wadi Abu Haraz (1803N|3339E). Ground and aerial control was in progress. 11,577 litres of Fenitrothion ULV has been applied up to 21 November.

In the Shendi area ground control was in progress against hoppers, including first and second instar bands, in the Abu Sayala and El Eraif areas west of Hajar El Tair (1633N|3255E). There were also dense second to fourth instar hoppers over 800 hectares at Hamoreiba (1617N|3403E) and El Nagaa (1617N|3319E).

Northern Kordofan Province

As reported in Summary No. 97, first to fourth instar hoppers were found at 11 localities totalling 8,500 hectare in the Jebel Mughanus area (1411N|3048E). On 20 October a thin density immature swarm covering 20 square kilometres was seen flying very low from east to west in the area. It was sprayed from the air on 21 October. Further swarms were sprayed in four other localities in the same area on 24 October. There were also numerous hopper infestations to the north of El Obeid, around Ummr Sayala and in the Hamrar El Wiz (1409N|3008E) areas. Three aircraft were operating in the general area up to mid-November, when some 60.000 hectares had been treated.

First-third instar hopper bands were also found at Gabral Saeed (1607N|3155E) and Abu Ashush (1555N|3130E). They were baited.

Northern Darfur Province

First to third instar hoppers were found over an area of 470 square kilometres west of El Fasher, where hatching started on 27 September. In early November there was further hatching west of Tawila (1330N|2454E). High density groups of second to fifth instar hoppers and fledglings at a density of 1,000 per hectare was reported over an area of 250 hectares at Kusim (1336N|2504E), and Fledglings were seen at Abu Sineita (1345N|2457E) and Birka (1342N|2502E). Ground and aerial control operations were in progress.

ETHIOPIA

Scattered adult Desert Locusts mixed with dense grasshoppers were sprayed over 1,300 hectares at Humera (1415N|3635E) on 7-8 November.

SOMALIA

Ground surveys found scattered adults at several localities between Bossaso (1114N|4900E) and Jaurb (1050N|4546E) between 1 and 4 October, the maximum density being 65 in one kilometre at 1107N|4738E.

No locusts were reported from elsewhere in the Region.

NEAR EAST

Meteorology

Widespread rainfall was reported from the southern Tihama of Saudi Arabia and the Tihama of Yemen Arab Republic and the Asir mountains, extending north and inland to Hail, Taima and Tebuk. PDR Yemen was dry. The Red Sea Convergence zone was located between 15^{o} and 20^{o}N.

Breeding conditions

Breeding conditions were started to be favourable in the southern Tihama of Saudi Arabia and the Tihama of the Yemen Arab Republic.

Conditions were also favourable for breeding in eastern coastal areas of PDR Yemen.

Locusts

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

Seven small second and third instar hopper bands were seen 25 kilometres east of Hisn Bilad. New hatching occurred at Irqah where the infestation covered 500 square kilometres and at Maseb, where the infestation covered 100 square kilometres. In late October 45 small bands were controlled between Hisn Bilad and Hawrah (1349N|4735E). Ground control using BHC dust, Fenitrothion and Dieldrin was in progress.

YEMEN ARAB REPUBLIC

Scattered adults were seen on the northern Tihama at Zohra and wadis Habl and Hayran.

KINGDOM OF SAUDI ARABIA

There were adults at densities of 600 per hectare over an area of 4 square kilomtres at Khabt Rukuba (1637N|4257E) in late October, and as adults at lower densities in several other localities south-east of Jizan.

OMAN

According to a late report for July, August and September adults were found at densities of 50-80 per square kilometre at Khor Bureimi (2154N|5748E) and at Wadi Shakla (2223N|5952E).

In a telex dated 14 October, it was stated that ground surveys had located hoppers and adults forming groups in the Sharqia. Later, it was stated that ground control operations were successfully mounted against gregarious breeding in Wadi Sal (2207N|5937E) and Wadi Mur (2214N|5942E) between 4 and 22 October using 50 l Dichlorfos 50 EC, 107 litres Fenitrothion 25 EC and 85 kg Lindane dust.

EGYPT

On 11 November an immature swarm reached the Gwarb Elmawhour area (2540N|2840E) and scattered over 50 square kilomtres. It was controlled by BHC bait.

There were no other reports from the Region.

SOUTH-WEST ASIA

Meteorology

Continental high pressure persisted and the north-est monsoon became established over the summer breeding areas, where there were scattered showers in the second half of September and the first half of October.

Breeding conditions

Conditions were becoming unfavourable for breeding.

Locusts

PAKISTAN

As reported in Summary No. 97, a 4 square kilometre mature swarm settled at Kanewari (2625N|6958E) on 17 September and a loose group adults was seen at Samrahu (2625N|7003E) on 19 September. Small pockets of hatchlings were controlled over 2 square kilometres at Kanewari on 29 September using 50 kg BHC 12.5% dust. Scattered adults were found at 39 localities in Uthal, Mirpur Khas, Sukkur, Bahawalpur and Rahimyar Khan districts during the second half of September, the maximum density being 4050 per square kilometre at Khewari (2650N|6847E) on 27 September. Scattered hoppers were also found at nine localities in Uthal, Mirpur Khas, Sukkur, Bahawalpur districts.

In the first half of October scattered adults were found at 75 localities in the Uthal, Mirpur Khas, Sukkur, Bahawalpur and Rahimyar Khan districts, the maximum density being 7,500 per square kilometre at Chhao (2625N|6915E) on 10 October. Scattered hoppers were found at five localities.

In the first half of November the maximum density of scattered adults was 4,750 per square kilometre at Chhao on 8 November.

INDIA

In the second half of September three thin density mixed maturity swarms ranging in size from 3 to 8 square kilometres were reported from the Kelawa (2655N|7148E), Shahgarh (2708N|6959E) and Mitha Bhinda (2659N|6952E) areas of Jaisalmer district on 16 and 26 September and were controlled on 17-18 and 27 September. Scattered second to fifth instar hoppers were seen at Barju (2821N|7310E) on 26 September. Scattered adults were found at 76 localities in Bikaner, Ganganagan, Churu, Nagaur, Jodhpur, Jaisalmer, Barmer and Bamaskantha districts, the maximum density being controlled at Barju on 26 September. Aerial and ground control operations were undertaken against adult concentrations in the Jaisalmer district and ground control operations were conducted against late instar hoppers and group of adults in Bikaner district. 6,560 kg of BHC 10% dust and 500 kg of Malathion ULV were used to treat 5,477 hectares.

In the first half of October control operations were mounted against gregaricolor third-fifth instar hoppers and adults and the remnants of a loose swarm in three localities in Jaisalmer district totalling94 hectares using 450 kg BHC 10% dust and 46 kg of Malathion ULV. Scattered adults were reported from 25 localities in Barmer, Bikaner, Churu, Jaisalmer and Bamaskantha districts, the maximum density being 1,550 per square kilometre at Shahgarh and Dungewala (2737N|7007E) on 11 and 15 October respectively.

IRAN

In July adults were present at a density of 60 per hectare over an area of 650 square kilometres north-east of Chahbahar. Control operations were conducted against solitaricolor fourth and fifth instar hoppers.

AFGHANISTAN was reported clear in August.

FORECAST FOR DECEMBER 1986 - JANUARY 1987

There has been widespread breeding in the summer breeding areas of Mauritania, Mali, Niger, Sudan, PDR Yemen, Oman, Pakistan and India and a number of swarms have been produced. Control operations have been mounted in all areas but considerable number of adults are likely to reach winter breeding areas and breed.

In West Africa adults surviving control measures in Mauritania, Mali and Niger are likely to concentrate in greener vegetation such as Schouwia so that further groups or even small swarms may reform. Breeding will terminate.

In North-West Afica breeding will end in extreme southern Algeria but considerable nuber of adults, possibly including groups may be present in eastern, central, southern and western Algeria, south-estern Morocco and western Libya.

In Eastern Africa swarms produced in the interior of Sudan are likely to move either north-east, or eastwards to the Red Sea coasts of Sudan and Ethiopia, where breeding is likely to become widespread.

Small scale breeding will probably occur on the northern coastal plains of Somalia.

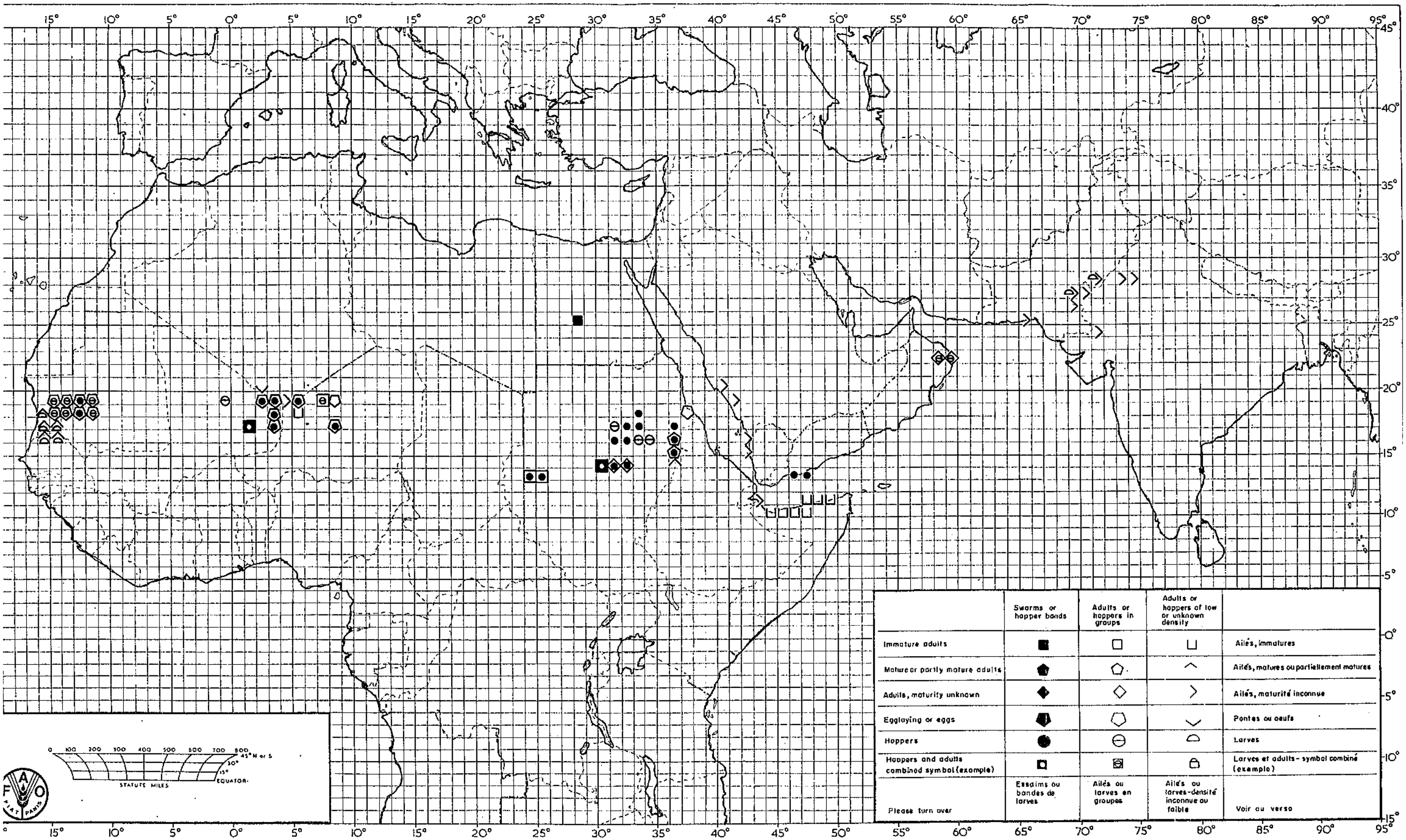
In the Near East, considerable number of adults, probably including some swarms are likely to reach the southern, central and northern Tihama of Saudi Arabia and some may reach Israel, Jordan, the interior of Saudi Arabia and even Southern Syria and Southern Iraq. Breeding will start on the Tihama of Saudi Arabia and is likely to result in the formation of hopper bands. Small scale breeding is likely to occur in the Yemen Tihama and in coastal and sub-coastal areas of Yemen PDR.

In South-West Asia increasing number of adults will occur in Baluchistan of Pakistan and Baluchistan-Seistan of south-east Iran. Considerable number of adults will remain in the summer breeding areas.

Rome
24 November 1986

1986

Desert Locust Situation Summary No. 98 OCTOBER-EARLY NOVEBER/OCTOBER-DEBUT DE NOVEMBRE



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AGP Division

Locusts, other migratory pests and emergency operations group

DESERT LOCUST SITUATION SUMMARY AND FORECAST

No. 99 NOVEMBER - EARLY DECEMBER 1986

SUMMARY

Widespread greagarious breeding in Sudan resulted in the formation of numerous swarms, one of which reached Egypt and others western and central Saudi Arabia. Gregarious breeding has started in Red Sea coastal areas and will become more widespread. In West Africa control operations terminated in Niger, Mali and Mauritania but considerable numbers of adults survive. Elsewhere a small swarm was reported in PDR Yemen and small populations were reported in Morocco, Tunisia, Somalia, Kuwait, Pakistan and India.

W/S2545

WEST AFRICA

Meteorology

The intertropical Front (FIT) continued to move south and by the end of November it was at about 10°N at the surface. Meteosat imagery indicated further northwards pulls of the FIT during the first decade of November, Tidjikja recording 9 mm of rain on 6 November. During the second and third decades the weather was dry in the interior but Atlantic disturbances produced pulls of the FIT, one on 5 December extended from the coast of Mauritania to temperate latitudes.

Maximum temperatures ranged from 35°C in interior areas to 25°C in coastal regions.

Breeding conditions

As a result of rains in September and October conditions were favourable for breeding in Tagant, eastern Trarza and Adrar in Mauritania. In Mali, conditions had become unfavourable for breeding in Tamesna and south-eastern Adrar des Iforas by early December. In Niger, also, conditions were no longer favourable for breeding by early December.

Locusts

MAURITANIA

As reported in Summary No. 98, joint Ministry of Rural Development, OCLALAV and Moroccan ground survey teams found infestations of hoppers and adults within the area 1800-1910N and 1130-1430W in early November, with gregarious populations in three blocks in the Khat el Moinane area (1820-1904N/1215-1220W) totalling some 800 square kilometres. These were reported by nomads to have resulted from the passage of a swarm in early October. Initially it was judged that all 800 square kilometres needed to be controlled but by 10 December control was completed having treated 38,550 hectares, of which 18,100 hectares by air and 20,450 hectares by ground. Total insecticides used: 8,900 litres of Fenitrothion 50%, 5,200 litres of Malathion 95% and 2,000 litres of Dieldrin 5%.

MALI

As reported in Summary No. 98 hopper bands and swarms were found by joint OCLALAV-Algerian ground teams in areas of green vegetation in Tamesna and south-eastern Adrar des Iforas ranging from hundreds to thousands of hectares.

Aerial and ground control measures were applied and by 26 November 33,099 hectares had been treated, of which 18,824 hectares by air and 14,275 hectares by ground teams, when control finished. 7,414 litres of Fenitrothion 1000, 1,570 litres of 5% Dieldrin and 800 litres of 20% Dieldrin were applied.

NIGER

In Air and Tamesna ground control operations were completed by the and of November. The total 39,270 hectares were treated using 8,415 litres of Fenitrothion 1000 and 16,800 litres of 20% Dieldrin. By early December the situation was reported to be calm.

NORTH-WEST AFRICA

Meteorology

During the first decade of November the eastern Maghreb was under the influence of Mediterranean depressions which gave moderate rains along the northern coast of Libya. By contrast, during the second decade, and in particular on 12 November, a cold front with waves moved from the Atlantic across Morocco giving torrential rains from Tangier to Laayoune. By 16 November the front had reached Algeria, giving 35 mm at Ghardaia. On 19 November disturbances affected the eastern Maghreb and on 25 November a new Atlantic depression resulted in further moderate-heavy rains in coastal areas.

Maximum daily temperatures were in the range 23^{o}-28^{o}C in interior areas and 18^{o}-22^{o}C in coastal areas.

Breeding conditions

Following widespread rainfall over much of the Algerian Sahara in October and again in the first two decades of November soil conditions were almost certainly suitable for breeding in many localities in the Sahara and NOAA/AVHRR imagery shows some vegetation development in the Tademait area and to the north of Tassili-n-Ajjer, and good vegetation development in the Oued Imiteq area of southern Morocco.

Locusts

MOROCCO

Three adults were seen at Oum Drayga (2348N/1311W) on 17-19 October. Scattered adults were seen at two localities in Errachidia and Ouazazate Provinces in 19-24 October. On 30 October solitarious adults were seen at densities of 10-50 per hectare over 200 hectares in green vegetation between Touzounine (2925N/0802W) and Akka (2923N/0814W) and were controlled on 31 October and 1 November.

TUNISIA

A total of 11 scattered adults was reported from Southern Tunisia in late November.

There were no reports from ALGERIA or LIBYA.

EASTERN AFRICA

Meteorology

Light rains were reported from Port Sudan but no rain was reported from the Red Sea coast of Ethiopia. No rains were reported from the northern coastal plains of Somalia but Djibouti reported 18 mm on 21 November.

Breeding conditions

By the end of November most coastal areas in Sudan were favourable for breeding.

Locusts

SUDAN

Widespread second generation summer breeding continued in a wide belt extending from Northern Darfur to Red Sea Provinces.

NORTHERN DARFUR PROVINCE

In early November there was further hatching west of Tawila (1330W/2454E). High density second to fifth instar hoppers and fledglings at a density of 1000 per hectare were reported over an area of 250 hectares. By mid-November some 37,000 hectares had been treated by aircraft using 24,000 litres of ULV pesticide and 4,200 hectares treated by ground units using 120,000 kg of poisoned bait.

NORTHERN KORDOFAN PROVINCE

Aerial and ground control operations were completed against hopper and adults infestations in the Um Dam, Sharshar, Mughanus, Gabrat Um Gamal, Dameira, Sodari Um Sayala and Hamrat el Wiz areas in mid-November.

NORTHERN PROVINCE

Aerial and ground control operations continued against hight density hoppers and adults over an area of some 600 square kilometres in the Baiyuda area (1733N/3207E). 420 hectares of high density hoppers and adults were also sprayed from the air south of Ed Debba. Egg laying adults and first instar hoppers were found in late November in the Merowe area. In early December a further 3,137 hectares were treated using 1,600 litres of Fenitrothion and 607 litres of diazinon EC.

NILE PROVINCE

In the Hassaniya aerial and ground control operations continued against high density hopper and adult infestations in the Abu Halfa, El Garas, Abu Usher and Abu Salam (17^{o}N, $32-33^{o}$E) areas and in Wadi Kurmut (1750N/3348E). Over 156,000 litres of liquid pesticide were used.

East of the Nile aircraft treated 1,600 hectares of adult infestations in the Umm Hawiya (1611N/3428E), Wadi Usheir (1604N/3429E) and Wadi El Basiyai (1604N/3437E) areas. Mature adults and hoppers of all instars were also found over 175 square kilometres east of the river Atbara. Ground control operations 60 square kilometres using 186 litres of Diazinon, 100 kg of HCH dust and 150 sacks of HCH bait. In the Shendi area control operations terminated against dense hopper and adult infestations in late November.

KHARTOUM PROVINCE

High density hopper and adults were found over an area of 190 square kilometres in Abu Teleik (1650N/330E) area in late November. A total of 24,000 litres of ULV insecticide and 3,246 sacks of HCH bait were applied. Scattered adults were also seen between the Niles and east of the Blue Nile.

WHITE NILE PROVINCE

In the Ed Dueim district aerial and ground control operations continued against hoppers and adults in the Helba (1415N/3137E), Arashkul (1409N/3206E), Baja and Abu Hamra (1429N/3154E) areas. In total 33,244 hectares were aerially sprayed and 4,691 hectares treated by ground teams, using 43,034 litres of ULV insecticides and over 121,000 kg of poisoned bait. Three swarms were seen in early December north-west of Ed Dueim and two swarms were seen in Kosti district.

GEZIRA PROVINCE

On 5 December a mature swarm measuring 6 sq km settled at Wad Habouba and later part settled on El Geneid Scheme (1448N/3319E).

KASSALA PROVINCE

In the Gash delta aerial and ground control operations terminated against hoppers and adults in the Metatib (1603N/3612E) and Tambai (1553N/3607E) areas in late November. 840 hectares were aerially sprayed in Wadi Odi using 1,000 litres of Fenitrothion. In early December two swarms covering 2,760 hectares were controlled in Eriba (1640N/3604E) and Wadi Omli and swarms were reported at Wadi Saloob (1704N/3635E), and Tshelel and Airabag (1640N/3604E). Groups of adults were also reported from Jehel Asoteriba (1704N/3525E).

RED SEA PROVINCE

The heaviest infestations were in the Derudeb (1730N/3610E) area. In mid-November dense groups of late instar hoppers fledglings and immature adults were found for some 40 kilomtres along the Kassala-Port Sudan road. Aerial and ground control operations were mounted but at least 12 swarms formed. One, measuring 1 sq. km flew over Derudeb on 20 November was controlled by aircraft; another settled over 30 sq.km at Dirbab (1747N/3601E) on 22 November and was controlled the next day. A third swarm was reported at Telguharai (1817N/3554E) on 23 November. A further nine swarms were controlled in the Derudeb area by early December. In all some 18,400 hectares were treated using some 6,000 litres of ULV pesticide.

In the Tokar delta mature copulating adults were found in many blocks in late November. In early December mature swarms invaded the Tokan delta. On 9 December one swarm of 30 sq. km settled at Tokar. Aerial spraying was in progress.

Scattered adults were also found in the northern section of the Red Sea up to the Egyptian border.

ETHIOPIA

A few scattered adults were reported from Mekele in early December.

SOMALIA

Scattered adults were seen in the northern coastal plains in late November.

There were no other reports from the Region.

NEAR EAST

Meteorology

The meteorological situation was complex during November. The north of the Arabian peninsula was affected by Mediterranean depressions so that there were periods of warm southerly winds ahead of fronts interrupted by periods of cool northerly winds behind them. Widespread rain was reported in northern and western Arabia in late November; El Wejh recorded 26 mm and Turaif 42 mm on 29 November, and flooding occurred in Rabigh, Mastura, Wadi Fatima and Mecca.

Breeding conditions

Due to the good rains in late November conditions were becoming favourable for breeding along the Tihama of Saudi Arabia.

Locusts

KINGDOM OF SAUDI ARABIA

On 21 November pink adults at high densities were seen along the shore between Jeddah and Badr, 250 kilometres to the north. These adults moved inland reaching Mecca, Wadi Fatima. On 25 November a swarm was reported from Yanbu and another was reported from Jeddah on 26 November. By 29 November a swarm was reported from Buraida in the Qassim. On 30 Novemebr an immature swarm was reported from Adham (2015N/4110E) and on 1 Decemebr a swarm of mixed maturity was observed copulating in the Gumaiga area (2020N/4027E) north-east of Lith. Adults also reached Tabuk in early December. Control was in progress in all areas.

Earlier, scattered adults had been reported form several localities in the Jizan area.

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

From 20-27 November 45 small hopper bands and 15 groups of fledglings were controlled in the Husn Bilad area. On 15 November a small swarm was seen at Al Khaber and Mahfid (1403N/4653E). Control operations continued in the Arqah area.

KUWAIT

At the end of October scattered adults were controlled using malathion and dimethoate.

EGYPT

As reported in summary No. 98, an immature swarm reached the Gharb El Mawhoub area (2540N/2840E) and scattered over 50 sq. km. It was controlled by HCH bait.

IRAQ was reported clear. There were no other reports from the Region.

SOUTH-WEST ASIA

Meteorology

Several eastward-moving disturbances crossed the region, particularly during the third decade, and some light to moderate rainfall was reported from Uthal, Khuzdar and Panjgur in the winter-spring breeding areas.

Breeding conditions

Drought prevailed in the summer breeding areas.

Locusts

PAKISTAN

In the second half of October scattered adults were found in 62 localities in Uthal, Mirpur Khas, Sukkur and Bahawalpur districts, the maximum density being 8,500 per square kilometre at Chhao (2625N/6915E) on 29 October. In the first fortnight of November scattered adults were found at 62 localities in Uthal, Mirpur Khas, Sukkur, Bahawalpur and Rahimyar Khan districts, the maximum density being 4,750 per square kilometre at Chhao on 8 Novemebr.

INDIA

In the second half of October 500 kg of HCH 10% dust were used to control 20 hectares of second to fifth instar hoppers in Jaisalmer district. A few first to fifth instar hoppers were found at three localities in Bikaner district. Scattered adults were found at 36 localities in Bikaner, Jodhpur, Jaisalmer and Banaskantha districts; the lightest density being 1,200 per square kilometre at Nokha (2818N/7223E) on 22 October.

In the first half of November scattered adults were found at four localities in Bikaner, Jaisalmer and Banaskantha districts the maximum density being 300 per square kilometre at Nokha on 8 November.

There were no reports from AFGHANISTAN or IRAN.

FORECAST FOR JANUARY-FEBRUARY 1987

Gregarious breeding will become more widespread on both sides of the Red Sea and breeding will commence in the interior of Saudi Arabia. Breeding could also commence in Southern Western Sahara and adjacent areas of Mauritania.

In West Africa adults which survived control operations in November may start to breed in western and north-western Mauritania in areas which receive winter rains. Adults in Mali and Niger will remain in areas of green vegetation but will not breed.

In North-West Africa, breeding may commence in Southern Western Sahara in areas which receive winter rains. Small scale breeding could start towards the end of the forecast period in South-East Morocco and in areas in the Algerian Sahara which receive rainfall or rain-off.

In Eastern Africa gregarious breeding will be widespread on the Red Sea coastal plains of Sudan and is likely to extend to the northern Red Sea coastal plains of Ethiopia. Small scall breeding will occur on the northern coastal plains of somalia.

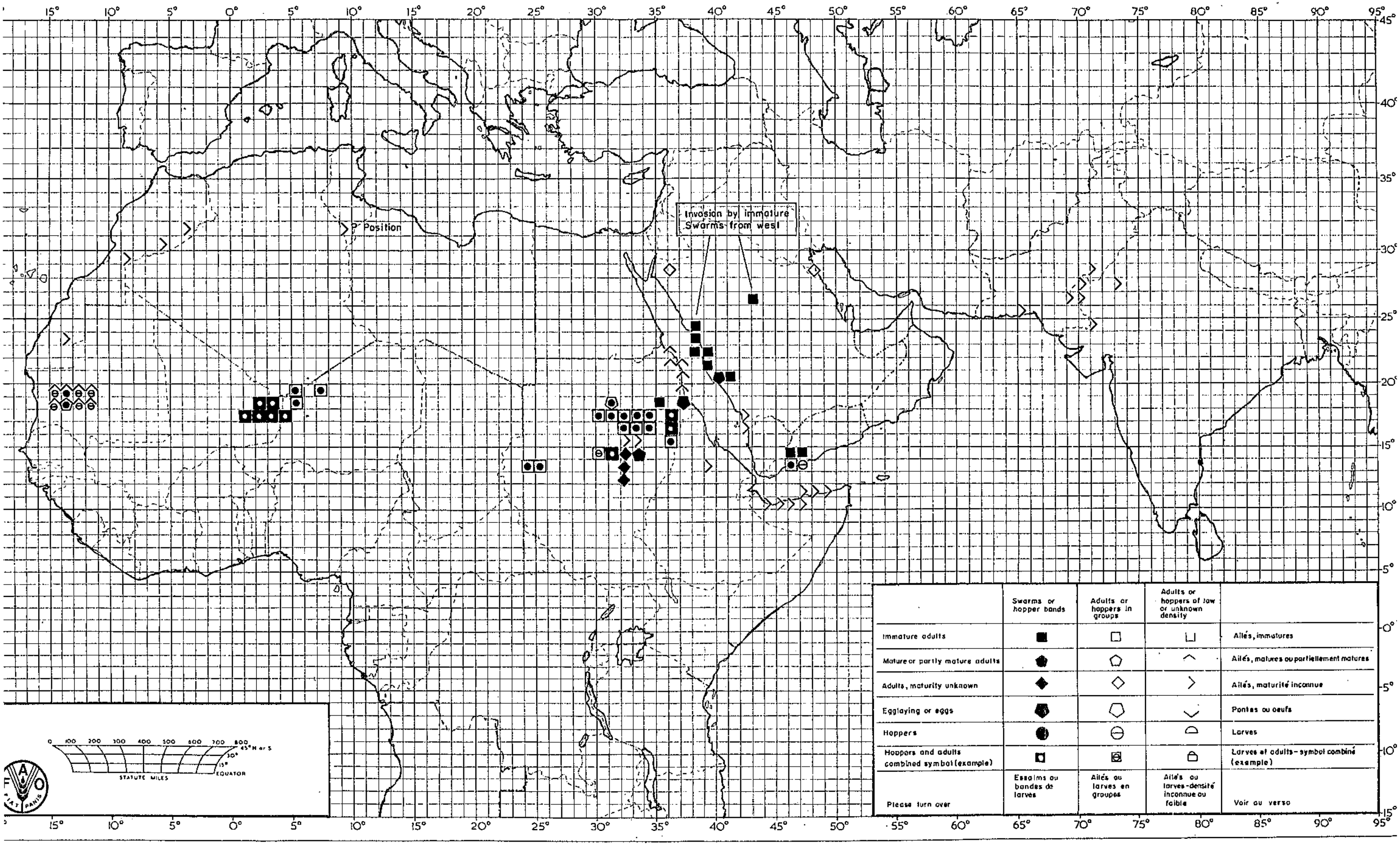
In the Near East gregarious breeding will be widespread on the southern Tihama of Saudi Arabia and will extend northwards, possibly reaching Sinai, Israel and Jordan towards the end of the forecast period. Gregarious breeding is also likely to occur in the South-Eastern Desert of Egypt. In the interior gregarious breeding will start towards the end of the forecast period and may be widespread in central northern Saudi Arabia and may extend into southern Jordan, southern Iraq and Kuwait. Small scale breeding may occur in the Yemen Tihama and may continue in coastal areas of Yemen PDR.

In South-West Asia small scale breeding may start in coastal areas of Baluchistan of Pakistan and adjacent area of Iran towards the end of the forecast period.

Rome
16 December 1986

1986

Desert Locust Situation Summary No. 99 NOVEMBER-EARLY DECEMBER/NOVEMBRE-DEBUT DE DECEMBRE



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DESERT LOCUST SITUATION SUMMARY AND FORECAST

No. 100   DECEMBER 1986 - EARLY JANUARY 1987

SUMMARY

Widespread and unprecedentedly late breeding in the interior of Sudan resulted in the formation of numerous swarms. Many reached the Red Sea coast where winter breeding started in Sudan and northern Ethiopia. Numerous swarms were reported from the southern Tihama of Saudi Arabia where gregarious breeding commenced. Elsewhere there were small scale control operations in Yemen PDR and small number of adults were reported from Mauritania, Niger, the Gulf of Oman and India.

W/S2855

WEST AFRICA

Meteorology

As reported in Summary No. 99 an Atlantic disturbance on 5 December resulted in a northward pull of the Intertropical Convergence Zone and gave cloud extending from Mauritania to temperate latitudes. During the first decade of December, Meteosat imagery indicates that rain probably occurred throughout Mauritania and in western Mali. In the last decade there was probably further rain in central,southern and western Mauritania.

Breeding conditions

NOAA/AVHRR imagery suggests that soil and vegetation conditions were likely to have been favourable for breeding in southern Mauritania, in parts of the Adrar des Iforas and southern Tamesna.

Locusts

MAURITANIA

Aerial and ground control operations were concluded against hoppers and adults in the Khat el Moinane area (1820-1904N/1215-1220W) by 10 December. A total of 38,550 hectares were treated, 18,100 hectares by air and 20,450 by ground. 8,900 litres of Fenitrothion 50%, 5,200 litres of Malathion and 2,000 litres of Dieldrin 5% were applied.

MALI

In late November late instar solitaricolor hoppers and immature adults were present in some wadis in south-west Tamesna and southern Adrar des Iforas (1700-1800N/0150-0400E).

NIGER

Only small numbers of immature adults were present in resctricted areas of green vegetation.

No locusts were reported from CHAD.

NORTH-WEST AFRICA

Meteorology

The Maghreb was under the influence of successive eastward moving mid-latitude depressions. The associated fronts gave widespread rain south of the mountains, particularly in the first decade.

Breeding conditions

NOAA/AVHRR imagery indicates that soil and vegetation conditions were likely to have been favourable for breeding over much of the Grand Erg Occidental and the Tademait plateau, northern Tassili-n-Ajjer in Algeria, over large areas in the Fezzan in Libya and in the Hamada Du Guir in south-east Morocco.

Locusts

No locusts were reported from the Region.

EASTERN AFRICA

Meteorology

The Red Sea coastal plains of Ethiopia around Massawa received heavy rain on 2-5 December. There were further heavy rain on the southern sector of the Red Sea coastal plains of Sudan during the third week of December. No rain reported along the coastal plains of northern Somalia or Djibouti.

Breeding conditions

Conditions are very favourable for breeding along the Red Sea coastal plains of Ethiopia and the southern sector of Sudan.

Locusts

SUDAN

Widespread and unprecedentedly late second generation summer breeding continued in the interior and despite aerial and ground control operations numerous swarms formed. These moved north-east to Red Sea coastal areas where winter breeding commenced.

WHITE NILE PROVINCE

Nine swarms were reported from around Ed Dueim between 5 and 13 December, mostly flying east. All were sprayed by ground teams or aicraft. Ground spraying continued in the Abu Hindi area (1342N/3235E) up to the end of the month. Two swarms were seen in the Kosti area in early December.

BLUE NILE PROVINCE

Several swarms were reported flying north-east across the Blue Nile in the vicinity of Sennar between 13 and 17 December. Ground control operations were in progress.

GEZIRA PROVINCE

On 5 December a 6 square kilometre mature swarm settled at Wad Habouba and a part later crossed the Blue Nile and reached the El Geneid scheme (1448N/3319E). Ground control was conducted. No damage to cotton was observed. Another swarm measuring 4 square kilometres was controlled at El Geneid on 12 December and a further swarm was reported flying north-east at Abu Guta (1445N/3244E).

NORTHERN PROVINCE

In Ed Debba and Merowe districts aircraft treated 2,688 hectares and ground teams 4,780 hectares using 1,600 litres of Fenitrothion and 607 litres of Diazinon. First instar hoppers were reported from Abu Sinon and were immediately controlled.

NILE PROVINCE

Ground teams applied 17,000 kg of BHC bait and 90 litres of Diazinon against adult infestations over 17,000 hectares in the Abu Ushar (1745N/3308E), El Garaa (1740N/3250E) and Abu Salam and 10,000 kg of poisoned bait against 4,200 hectares of adults at Abu Kurmut (1739N/3348E).

East of the Nile, ground control operations were mounted against late instar hoppers and adults over 3,200 hectares at Eiladebba (1707N/3454E) and over 5,600 hectares at Adorama (1707N/3452E) using 336 litres of Diazinon EC and 6,800 kg of poisoned bait and 25 kg of Agrocide 7. Aerial spraying was conducted against swarms at Kalalab (1648N/3503E) and Umm Rus (1643N/3504E) totalling 4,800 hectares.

KASSALA PROVINCE

In early December surveys were made to the north of the Gash delta. One swarm covering 1,260 hectares was controlled at Airabag (1640N/3604E), and another of 1,500 hectares was controlled at Wadi Omli (1703N/3132E). On 2-3 December swarms were reported flying north-east at Wadi Odi (1703N/3638E) and Hamashkureib (1710N/3645E). Groups of adults were reported from Jebel Asoteriba (1704N/3625E).

Later, high density adults were reported damaging cultivations along the Atbara river between Goz Regeb and Baaluk (1637N/3513E). Aerial and ground control measures were applied.

RED SEA PROVINCE

Many immature, maturing and mature, medium-high density swarms reached the Tokar delta throughout the month. Many were copulating and laying. Aerial and ground control operations were mounted over 340 square kilometres using 14,960 litres of Diazinon and 2,050 litres of Fenitrothion. Other swarms were reported from Aqiq (1812N/3812E), Adobana (1810N/3816E) and between Jebel Aitarba (1755N/3821E) and Karora (1742N/3822E). North of Port Sudan control operations were in progress against early instar hoppers in Khor Oko (2028N/3651E).

On 6 January an immature 6 hectare swarmlet was seen at Khor Balatat (1757N/3722E) and controlled using 220 litres of Fenitrothion 50%.

ETHIOPIA

In early December a ground survey team reported that farmers were controlling scattered adults at Wadi Gulbub (1628N/3906E) and Wadi Adibarbo (1648N/3800E). A copulating swarmlet was reported from Emit (1628N/3848E). In the first week of January mature adults were reported from Wadis Emit (1625N/3945E), Algena (1718N/3835E), Geleb Sagla (1700N/3850E) and Akbanazuf (1550N/3910E). A swarmlet which had already laid was seen west of Massawa.

SOMALIA

Scattered adults were reported from northern Somalia.

No locusts were reported from DJIBOUTI.

NEAR EAST

Meteorology

The north of the Arabian peninsula continued to be affected by Mediterranean depressions. These gave widespread rainfall, which extended along the Tihama.

Breeding conditions

As a result of the good rains, breeding conditions were favourable along the Tihama.

Locusts

KINGDOM OF SAUDI ARABIA

As reported in Summary No. 99, a swarm of mixed maturity was reported from Gumaiga (2020N/4027E) on 1 December, and adults reached Tebuk in early December. In mid-December further swarms reached the Tihama between Jeddah and Jizan and started to lay. Helicopters and ground units attacked all swarms with very good results but hatching occurred, leading to the formation of hopper bands. These were also controlled with excellent results. By 14 January all swarms and major hopper infestations were reported to have been controlled. A total of 16,250 litres of Dieldrin and 7,500 litres of Fenitrothion were applied.

Scattered adults were seen around Jeddah and Khulais.

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

In the Arqa area control continued against small groups of hoppers.

GULF OF OMAN

A single locust was observed on board a ship at 2000 hours GMT on 1 January at 2407N, 5716E. The wind was NW, 7-16 knots.

There were no other reports from the Region.

SOUTH-WEST ASIA

Meteorology

Light to medium rainfall was recorded at Uthal, Kharan, Quetta and Khuzdar on 25 November and at Panjgur the following day. No rain was reported in the winter-spring breeding areas during December.

Breeding conditions

Unfavourable.

Locusts

INDIA

Scattered adults were reported from six localities in Jaisalmer, Bikaner and Ganganagar districts in the second half of November from one locality in Bikaner district in the second half of December.

No locusts were reported from PAKISTAN during December, or from AFGHANISTAN or IRAN.

FORECAST FOR FEBRUARY-MARCH 1987

Gregarious breeding will become more widespread on both sides of the Red Sea and breeding will commence in the interior of Saudi Arabia. Breeding may also begin in southern Western Sahara and adjacent areas of Mauritania.

In West Africa adults which survived control operations in November may start to breed in Western and North-Western Mauritania in areas which receive winter rains. Adults in Mali and Niger will remain in areas with green vegetation but will not breed.

In North-West Africa breeding may commence in southern Western Sahara in areas which receive winter rain. Small scale breeding may start in south-east Morocco and in areas of the Algerian Sahara which receive rainfall or run-off.

In Eastern Africa gregarious breeding will be widespread on the Red Sea coastal plains of Sudan and northern Ethiopia. Small scale breeding may occur in the northern coastal plains of Somalia if there is rain.

In the Near East gregarious breeding will continue on the southern Tihama of Saudi Arabia and is likely to extend northwards to the northern Tihama and may occur in Sinai, Israel and Jordan. Further crossings of the Red Sea may occur during periods of warm southerly winds. Gregarious breeding is also likely to occur in the South-Eastern Desert of Egypt. In the interior of Arabia breeding may become widespread in central and northern Saudi Arabia and may extend into southern Jordan, Southern Iraq and Kuwait. Gregarious breeding may also extend to the Yemen Tihama. Small scale breeding is likely to continue in coastal areas of Yemen PDR.

In South-West Asia small scale breeding may start in coastal areas of Baluchistan of Pakistan and adjacent areas of Iran.

Rome
19 January 1987

1987

Desert Locust Situation Summary No. 100 DECEMBER 1986 - EARLY JANUARY 1987 / DECEMBRE 1986 - DEBUT DE JANVIE[R]