College of Arts and Sciences

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AUTUMN FLOWERING ON THE GYPSUM DESERTS OF BAGHDAD

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Most serious botanizing on the deserts has been done in the spring, when, if winter rains have been sufficient, a vast concourse of plants blooms together, while those few that are not yet in flower are quite inconspicuous. The last of the spring-flowering plants to bloom are the *Centaurea* species, *mesopotamica* and *bruguierana*, both annuals, found in bud and early flower 20 April 1955 and in full flower and early fruit 14 May 1955. The hot dry summer makes collecting both unpleasant and unproductive, for from late May onwards, the exact date doubtless depending on the lateness and abundance of the spring rains, flowers are few, and even fewer are fertilized to give fruit. The shallow-rooted annuals that have completed their flowering die, and perennials enter a period of inactivity.

But in the autumn, from September onwards, the deserts become productive again. A few plants normally flower at this season and at no other, the true autumn flowerers, but many others, indeed the majority of the perennials, may put out at least a few flowers and set an additional crop of fruit. Collecting at this season brings in a surprising variety, not usually in the best condition, for no rains can be expected before November or December, and grazing pressure is usually severe. But sooner or later some individual or small group of most of the perennial species can be found in flower.

The reasons for this are still unknown, but probably depend, at least in some species, on reduced water-loss as the days become shorter and cooler. In the deserts of Arizona Cannon (1913 p. 75) suggested 'that sufficient moisture persists in the soil to tide perennials over the long periods of drought, although not in sufficient quantities to permit active growth during the dry seasons'. But the whole subject of reaction to drought, reviewed recently by Parker (1956), is highly complex and certainly not fully understood.

Autumn flowering of desert plants, though mentioned by

Volkens (1887, p. 84) in his Egyptian studies, seems little known, and it is primarily to call attention to the phenomenon that this paper is presented. At the same time the specialist plants will be mentioned, those that flower and fruit only in the autumn, and those that flower only in the spring and never in the autumn, so as to classify, from this aspect, most of the commoner perennails of the deserts near Baghdad.

The observations recorded were made on visits to the Faluja (Fal.) and Iskanderiya (Isk.) deserts between the Tigris and the Euphrates and near the towns of those names. Both are gypsaceous and sprinkled with kilns, where the ordinary plaster of the country, "juz", is burned. Most of the plants are found in slight natural hollows, where a little sand accumulates on the surface, and particularly in the gypsum pits and borrow pits for the road embankments, where conditions are especially favourable to plant growth, as blown sand is plentiful and there is some protection from the winds that scour the desert surface. Thomas (1922) and Kassas (1953) have emphasized the importance of such sandy patches in the Egyptian deserts, where the larger perenials are often confined to them. A few observations come from the deserts of similar type to the south of Lake Habbaniya (Hab.) and near Kerbala (Ker.) and Ramadi (Ram.), and material collected by Professors C. Boswell and K. Rechinger has been included. Professor Rechinger has very kindly seen to the identifications, apart from a few species named of Kew and in the National Herbarium at Abu Ghraib.

All the deserts mentioned are near enough to populated areas to be heavily grazed. Many species that might be expected are not in fact found and those that do grow mostly do so as scattered, stunted individuals. Possibly this actually favours autumn flowering, for the cutting of the shoots induces secondary growth and the sparseness of the plants allows those individuals that survive to make good use of such water as there is, stored underground from the previous winter and spring.

Specialized autumn flowers.

The habit of autumn flowering is highly developed among the perennial Chenopodiaceae, which are very well represented in

Iraq as a whole, but by only two species on the deserts near Baghdad, *Haloxylon salicornicum* and an unidentified *Suaeda*. The *Haloxylon* (Fig. 1A) in the spring growing season throws up from its woody base a number of succulent green branching stems. In the autumn these carry the inconspicous flowers at their tips in the axils of the scale-leaves and on short side-branches. The fruits are winged, giving the plants in autumn quite a different appearance to their usual bare aspect (Hab., 18 November 1956). In winter many of the branches, particularly the short branches that have borne flowers, die and break off.

The *Suaeda* has fine woody stems, brittle when young but becoming very tough as they thicken, and fleshy green leaves covered with woolly hairs, in whose axils the flowering shoots are borne (Isk. 16 November 1956). In other parts of Iraq many shrubby species of *Suaeda*, *Salsola* and *Seidlitzia* are found flowering in the autumn.

The annual Chenopodiaceae may flower in spring, as *Kochia muricata* and *Bassia eriophora* (Isk. 2 May 1956 and Fal. 20 April 1955) or may flower and fruit in the autumn. The succulent- leaved *Salsola inermis* (Fig. 1B) has minute flowers, but the ripening fruits (Fal. 31 October 1956), with their broad, pink-tinted wings, make the plant a conspicuous and beautiful object of the desert roadside. *Cornulacca monocantha* (Fig. 1C), a spiny plant with inconspicuous flowers and fruits hidden amongst the leaves, is found both on abandoned ploughland and on the gypsum desert.

The euphorbiaceous *Crozophora verbascifolia* is equally at home on waste ground of the alluvial plains, especially near villages, for it is little eaten by animals, on abandoned ploughland and on the deserts. (Hab. 18 November 1956). On old plough it may be associated with two annual *Euphorbia* species, *lanata*, an upstanding form supported by a central stem, and an unidentified creeping form (Kahn-Beni-Saad, 9 November 1954). *E. lanata* may also be found on the desert edge, while the other species (cf. *granulata*) is a characteristic plant of the gypsum deserts (Fal. 31 October 1956). These Chenopodiaceae and Euphorbiaceae are the only annuals still alive at this season, before the next crop of spring flowers has germinated.

The composite *Artemisia scoparia* (Fig. 1D), which grows in hollows of the gypsum deserts and also on dry waste ground in the alluvial plain, is again an autumn flowerer (Fal. 31 October

Fig. 1. Specialized autumn flowerers.

A. *Haloxylon salicornicum*, twigs and fruit.
B. *Salsola inermis*, small individual.
C. *Cornulaca monacantha*, branch and detail.
D. *Artemisia scoparia*, last year's stem, this year's inflorescence, and beginnings of next year's shoots.

1956, flower and young fruit; Jadriya, near Baghdad, 8 December 1956, fruit). The fruiting panicles are found still bearing a few green bracts with a cluster of new shoots for next year's flowering at their bases. *Artemisia herba-alba*, rarer than *A. scoparia* near Baghdad, also flowers in the autumn (Isk. 16 November 1956; Ram. 21 November 1956, Rechinger).

There are no leafless autumn flowerers near Baghdad, though an autumn flowering *Colchicum* grows in moister parts of the country. Nor are any of the specialized autumn flowering ligulate Compositae known here.

Potential autumn flowerers.

Convolvulus pilosellaefolius (Fig. 2A) is a common plant of the gypsum deserts, of irrigated fields, and of dry waste places on the alluvial plain, for example Karradat Mariam in Baghdad. The delicate pink flowers are carried in small groups on slender side branches arising in the axils of the leaves of the main stems (Fal. 16 April 1955), the whole forming a graceful brushwork which eventually reaches a height of about 2 feet. In summer these stems die away, and in autumn many plants make no attempt to flower, but others send out fresh flowering stems (Fal. 23 September 1954 and 31 October 1956). These autumn stems are shorter and more slender than those of spring, the leaves are smaller and the side branches carry fewer flowers, often only one, but some good seed is set.

Another type of desert *Convolvulus*, (*C. oxyphyllus*, possibly with other species mixed, Fig. 2C) is a stiff dwarf shrub, whose branches and leaves are covered with woolly hairs. Each branch is stout where it is attached to its parent stem, but narrows at its tip to a sharp point. The delicate flowers are carried in the axils of the leaves along the young branches, but are inconspicuous, as only a few open at a time, and they are rather small and hidden away in the mass of spines. The main flowering is in spring (Fal. 15 May 1955), and in summer the greater part of the shoot system dries off, losing all its leaves and hairs, to form a dead spiny mass giving little indication of the genus to which the plant belongs. But in the autumn (Fal. 31 October 1956; Isk. 16 November 1956) a few flowers and fruits may be borne on short, late spiny shoots

Fig. 2. Spring and autumn flowerers.

A. *Convolvulus pilosellaefolius*, spring and autumn aspects.
B. *Scrophularia deserti*, spring and autumn aspects.
C. *Convolvulus ?oxyphyllus*, spring aspect.
D. *Scrophularia hypericifolia*, spring and autumn aspects.
E. *Convolvulus* sp., autumn aspect.

with reduced leaves, which contrast with the newly developed leafy shoots springing from the crown for next season's flowering (Fig. 2E).

Scrophularia deserti (Fig. 2B) produces, in good conditions, such as the wet spring of 1955, fine branching panicles, 1½ feet long, which set an abundance of fruit (Fal. 20 April 1955). In poorer years such as the dry 1956 the panicles are but a third the length, and there are no leafy side shoots (Isk. 2 May 1956). During the summer the whole plant is usually grazed close to the ground so that the ends of the various generations of shoots come to form a rough, hard cushion which collects blown sand. In the autumn new leafy shoots appear at the woody bases of the old stems, where they are more or less protected against grazing. But occasionally (Isk. 16 November 1956) a few stunted flowering shoots may be thrown up.

Scrophularia hypericifolia (Fig. 2D) is a spiny, shrubby type, somewhat resembling a spiny *Convolvulus*. The woody bases of the flowering stems are already stiff and white-barked at the time of flowering (Ker. 2 May 1956), while the tips are softer, but eventually the whole length of the stem becomes stiffened to form a long spine. The flowers are usually carried singly on the tips of short side branches, but there may be a second flower in the axil of one of the paired bracts. Just below the attachment of the terminal flower each of these side branches is narrowed. Now if the flower is fertilized the whole length of the branch is thickened to carry the fruit, but if, as frequently happens, it is not, the flower withers and drops off, leaving the branch as a short spine with a sharp tip formed by the narrowing. In summer, then, the whole plant forms a spiny greyish-white mass, usually but lightly grazed, and apart from new season's shoots beginning to grow from the base, this is its usual aspect in autumn too. But, again exceptionally, new flowering stems may be found at this season (Hab. 18 November 1956).

Heliotropum persicum (Fig. 3A) is a common plant whose green leafy stems, bearing flowers in paired open scoripibid cymes, are to be found growing freshly in both spring (Fal. 16 April 1955, flower and young fruit) and autumn (Isk. 16 November 1956, same state). There is no difference in the appearance at these times, and

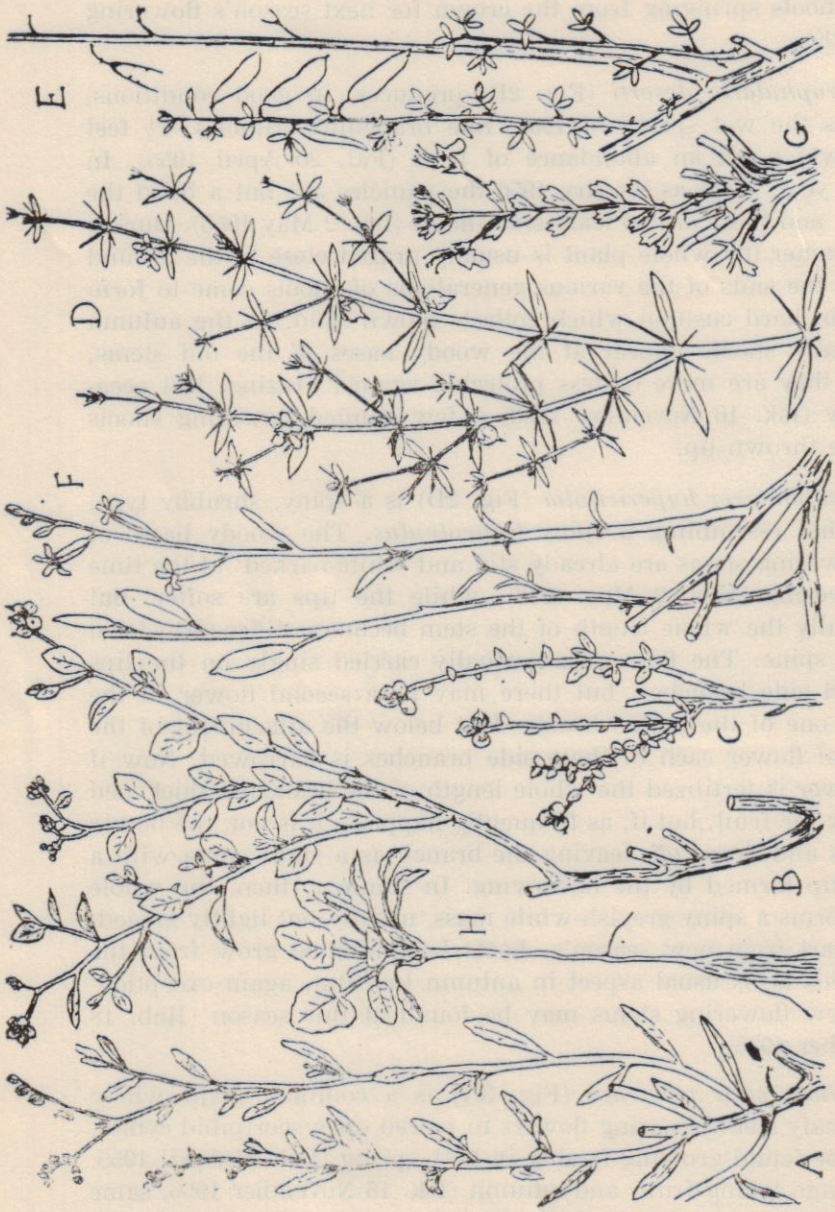

Fig. 3. Various desert plants.

A. *Heliotropum persicum.*
B. *Heliotropum luteum*, spring.
C. *Heliotropum luteum*, autumn.
D. *Fagonia olivieri*, autumn.
E. *Cleome arabica*, autumn.
F. *Farsetia aegyptia.*
G. *Teucrium oliverianum*, autumn.
H. *Erodium glaucophyllum*, autumn.

it would often be impossible to tell at which sesason the collection had been made from the condition of the gathering.

Heliotropum luteum (Fig. 3B) is a rarer, more woody type, with broader leaves and the flowers closer together. In spring the leaves are conspicuous and the stems soft, and as both leaves and stems are covered by a dense wool the whole plant has a grey-green appearance (Isk. 2 May 1956). In summer the spring twigs die back, and in autumn new flowering branches are formed, but these are woody and short, and the leaves very small, so that the plant has a twiggy appearance and the white bark is conspicuous (Isk. 16 November 1956, Fig. 3C).

Of the perennials mentioned then the *Heliotropum* species flower frequently in the autumn, the *Convolvulus* less frequently, and the *Scrophularia* rarely, and most of the other desert perennials fall within the range of this pattern.

Of the three *Fagonia* species of our deserts *olivieri* (Fig. 3D) sprawls over the ground, *bruguieri* forms a spiny, hummocky mass, full of blown sand, *glutinosa* hugs the ground closely, and all thre are found, often growing together, with buds, flowers and fruits in the autumn. *Zygophyllum coccineum*, a succulent shrublet, is in the same state. *Tribulus terrestris*, if it survives the summer, carries flowers and fruits at the ends of its lax, trailing stems, and *Tribulus alatus*, a more robust and much rarer plant, has been found on the edge of the Habbaniyah desert, facing the Euphrates, also in flower and young fruit. These 6 plants belong to the Zygophyllaceae, a small family very well developed in the deserts of Africa and Asia, and they share, in spite of great variation of habit, a common type of shoot system. A pair of leaves, a side branch, and a flower spring from each node, so that, once a shoot has started to flower, it must continue to do so as long as it continues growing.

Pegamum harmala is another zygophyllaceous plant, but in this case the flowering season is more restricted. Soft, dark green, leafy shoots, conspicuous, but uneaten as they are poisonous, spring up boldly from an underground stock during the winter, and the large white flowers open, many together, in spring (Fal., 20 April 1955). These stems die in summer, and only the beginnings of the new leafy shoots can be found in autumn on the deserts.

But on the alluvial plain, where the plant grows as a weed, it has, in exceptional circumstances, been seen flowering on fallow from irrigated ground (Fal., 18 November 1956).

Probably all the plants mentioned as potential autumn flowerers are also potential annuals, that is plants which flower more or less regularly in their first season, so that even if they die later in the summer heat, at least some seed has been set. *Cleome arabica* is certainly such, for in Egypt most individuals die in their first summer, and only a minority survive to flower again (Haines, 1951). In Iraq it is common, and the strong smelling, unpalatable, dark-green shoots, with their small flowers and large pods, stand up boldly in late spring amongst the dying annual *Schismus* grass (Ker. 26 April 1956). In autumn the survivors have new shoots with smaller leaves, growing from the bases of the dead spring stems (Isk. 16 November 1956, Fig. 3 E). *Cleome stocksiana*, which grows on the Falluja desert, has not been found alive in the autumn, but it is a rarer plant and may have been missed.

In other countries *Atractylis flava* and *Plantago albicans* commonly grow as perennials, though flowering in their first season as potential annuals, the *Plantago* propagating vegetatively by fleshy stolons in Algeria (Cannon, 1913), p. 64). In Iraq the *Plantago* grows as an annual (Blackelock, 1940, p. 441). A few specimens of the *Atractylis* have been found with green leaves in the autumn, and this species occasionally persists as a perennial. Neither plant has been found flowering in the autumn.

Farsetia aegyptia is another potential annual, for in Egypt it was found flowering as quite a small plant (Haines, 1951), though later it may grow up into a bush of considerable size, usually with a clipped appearance due to hard grazing. Only one specimen has been found near Baghdad, and that in the autumn, with flowers and fruit (Hab., 18th. November 1956, Fig. 3F). The fruits were particularly welcome as they settled the identity of the plant, left doubtful by Blakelock (1955) as he had no fruit on his Iraqi material from which to make a certain diagnosis.

Calligonum sp. is found commonly in autumn with a few flowers and young fruits (Isk. 16 November 1956), and so are *Citrullus colocynthus*, *Andrachne telephioides* and *Aristida plumosa*. *Astragalus spinosus* is usually barren at this time, but occa-

sionally a bush is found in full flower (Fal. 31 October 1956). *Astragalus dactylocarpus* has been seen flowering by Rechinger (Ram., 21 November 1056) on the protected sandy floor of a borrow pit, and *Diplotaxis harra*, *Anvillea gracilis*, *Francoeuria crispa*, *Launea mucronata*, *Teucrium oliverianum* (Fig. 3G) and *Helianthemum lippii* have also been found in autumn flower.

Strict spring flowerers.

Of the two bulbous plants that grow on the gypsum deserts, *Gagea* sp. flowers early (18 February 1955, Boswell) and is in completely dry fruiting condition 3 months later (Fal. 14 May 1955), while *Allium* sp. flowers later (Fal. 21 March 1955, Boswell, flowers; 14 May 1955, fruit). In summer and autumn no part appears above ground and these species are undoubtedly strict spring flowerers. So also is *Onopordon canum*, which grows from a basal crown on a long fleshy root, and *Poa bulbosa*, which grows from the tubers from which it is named.

There are a number of other perennial plants that have not been found in autumnal flower on the deserts. *Salvia lanigera* and *spinosa*, *Achillea santolina* and *fragrantissima*, *Teucrium polium*, *Onobrychis ptolemaica*, *Gypsophila capillaris* and *Erodium glaucophyllum* (Fig. 3H) and *Haplophyllum propinquum* have at most short, young, leafy shoots close to the ground, though the last was found flowering in damp, rich earth beside an irrigation ditch in a vegetable patch (Sumeicha, 26 October 1956). *Paronychia arabica* has brittle silvery shoots with close-packed leaves, and *Herniaria hemistemon* forms small leafy patches, both contrasting strongly with the branching aspect of the flowering plants in spring. The umbellifer *Ducrosia anethifolia* appears as little, leafy, hemispherical mounds, from which the tall flowering stems will break in spring. Probably most of these are strict spring flowerers, but some may flower exceptionally in autumn, even in desert conditions.

The one fruit tree of the open desert (*Zizyphus nummularia*) flowers in spring and fruits in autumn (Fal. 18 November 1956), but no other plant has been found doing this. *Lycium barbarum* has been found in flower and fruit in both autumn and spring, but this is a plant of the alluvial plain which occasionally invades the desert edge, rather than a truly desert species.

SUMMARY

All the annuals of the gypsum deserts flower in the spring except a few Chenopodiaceae and Euphorbiaceae, such as *Cornulacca monocantha* and *Crozophora verbascifolia*, which wait till the autumn.

Of the perennials some, such as *Gagea* sp., are strict spring flowerers, and there are many that have not been found flowering in the autumn and may never do so.

The majority of desert perennials may, either commonly as in *Heliotropum persicum*, or rarely as *Teucrium oliverianum*, flower in the autumn as well as the spring, often less freely and on dwarfed shoots. This occurs long before rains are expected.

The perennial Chenopodiaceae, and the *Artemisia* species of the gypsum deserts flower only in the autumn.

REFERENCES

Blakelock, R.A. (1950). The Rustum Herbarium, Iraq. Part IV. *Kew Bull.* 441-460.

Blakelock, R.A. (1955). Notes on the flora of Iraq with keys. Part II. *Kew Bull.* 497-565.

Cannon, W.A. (1913). *Botanical features of the Algerian Sahara.* Carnegie Inst. Wash. Publ. No. 178.

Haines, R.W. (1951). Potential annuals of the Egyptian desert. *Bull. Inst. Fouad Ier du Desert* 1, 115.

Parker, J. (1956). Drought resistance in woody plants. *Bot. Rev.* 22, 241-289.

Kassas, M. (1953). Habitat and plant communities in the Egyptian desert. II. *J. Ecol.* 41, 248-256.

Thomas, H.H. (1922). Some observations on plants in the Libyan desert. *J. Ecol.* 9, 75-89.

Volkens, G. (1887). *Die Flora der aegyptisch-arabischen Wüste auf Grundlage anatomische-physiologischer Forschungen.* Berlin: Borntraeger.

DIPTERA FROM IRAQ

KAMEL T. KHALAF,

High Teachers College, Baghdad.

The species which are reported in this work included about 350 specimens collected by the writer or by students of biology under his supervision in the High Teachers College in the years 1953-1957. The great majority of the insects were collected in Baghdad. The reported incidence following each species is for this city, unless stated otherwise.

The final determinations were made by various specialists through P.W. OMAN, Head of the Insect Identification and Parasite Introduction Section, Beltsville, Maryland, to whom we are deeply grateful. For the identification of these flies we are greatly indebted to C.W. SABROSKY (Calliphoridae, Oestridae, Scopeumatidae, Muscidae, Larvaevoridae, Sciomyzidae, and Conopidae), W.L. DOWNES (Sarcophagidae), A. STONE (Hippoboscidae, Tabanidae, Scatopsidae, and Bibionidae), P.H. ARNAND (Syrphidae and Drosophilidae), and R.H. FOOTE (Otitidae, Agromyzidae, and Tephritidae).

With the exception of the duplicates kept in OMAN's Section, the classified insects are now preserved in the college collection with the intention of depositing duplicates in other interested institutes in Iraq.

BIBIONIDAE

Philia sp.: Samarra (Feb.).

SCATOPSIDAE

Scatopse notata (L.): Mosul (Feb.).

TABANIDAE

Tabanus eggeri Schin.: Baqouba (March).

T. crassinervis Vill.: (Feb.).

T. spp.: Baghdad, Mosul, Sukreen, Samarra and Sa'dia.

Chrysozona sp.: Shaklawa (July).

SYRPHIDAE

Tubifera tenax (Linn.): (Oct. — June), Khanaqin (Dec.), and Baqouba (March).

T. aenea (Scopoli): (Nov. — May) and Sa'dia (April).

T. quinquelineatus (Fabr.): (Nov., Dec., and April).

Syritta sp.: (March).

Metasyrphus corollae (Fab.): (Nov., Dec., and April), Baqouba (Dec.), and Samarra (Feb.).

Syrphus sp.: (Oct. — Feb. and April).

Sphaerophoria sp.: (April and Sept.).

CONOPIDAE

Myopa buccata (L.): (March).

OTITIDAE

Chrysomyza demandata (F.): (Oct. and March — June) and Samarra (Feb.).

Ceroxys sp.: (April).

TEPHRITIDAE

Orellia punctata Schr.: (April).
Trupanea augur Frfld.: (April).

DROSOPHILIDAE

Drosophila sp.: (Nov., Feb., and April).
Scaptomyza sp.: (April).

AGROMYZIDAE

Agromyza sp.: (Nov.).

SCIOMYZIDAE

Dichaetophora (*gracilis* Lw.?): Shaklawa.

MUSCIDAE

Muscina stabulans (Fall.): (Dec.) and Baqouba (Dec.).
Graphomya maculata (Scop.): Baqouba (March).

Hylemya cilicrura (Rond.): (March).
Paregle cinerella (Fall.): (Dec. and March).
Fannia sp. or *spp.*: Shaklawa and Samarra.
Musca sorbens Wied.: (Nov.).
M. domestica vicina Macq.: (Nov. — June).
M. d. nebulo F.: (Oct. — April).
M. domestica complex: (Nov. — May).
Dasyphora hirsutomaculata (Macq.): Samarra (Feb.).
Limnophora sp.: Baqouba.

CALLIPHORIDAE

Calliphora vomitoria (L.): (March) and Baqouba (March).
C. vicina R.D.: (Oct. — May,), Falluja (March), and Hilla (Dec.).
Phaenicia sericata (Meig.): (Nov. — May) and Baqouba (March).
Chrysomya albiceps (Wied).: (Oct. — May), Baqouba (Dec.), Samarra (Feb.), and Falluja (Oct.).
Pollenia sp.: Baqouba.

SARCOPHAGIDAE

Sarcophaga striata Fall.: (Feb.).
S. haemorrhoidalis Fall.: (Oct. — Aug.), Baqouba (March), Khanaqin (Dec.), and Hilla (Nov.).
S. argyrostoma R.D.: (Feb.).
S. hirtipes Wied.: (Oct, Nov., and March).
S. carnaria Linn.: (March and April).
S. melanura Mg.: (Nov. — May).
S. sp.: Baghdad.

OESTRIDAE

Oestrus ovis (L.): (Feb.).

SCOPEUMATIDAE

Scopeuma stercorarium (L.): Samarra (Feb.).

LARVAEVORIDAE

Linnaemya sp.: Baghdad.

HIPPOBOSCIDAE

Hippobosca equina L.: Shaklawa (July) and Baghdad.
H. longipennis F.: (Nov.).

A PRELIMINARY NOTE ON FOUR BIRDS WHICH APPEAR TO BE NEW TO THE IRAQ LIST.

C. Boswell and P. Naylor.

During a brief visit to Northern Iraq at the end of April 1957, the following birds, which appear to be new to the Iraq List, were observed on the slopes of Mosul Shirawish. Shirawish runs up to the Iraq frontier with Iran and is close to Hajji Umran Summer Resort.

1. HORNED or SHORE LARK.

Eremophila alpestris penicillata.

First noticed at about 6,000 ft. on April 29th, they were fairly frequent up to about 9,000 ft. and the following day they seemed to be more numerous. The confluent black cheek and throat patches were most conspicuous. A female was obtained and the skin is preserved in the Iraq Museum of Natural History.

2. MOUNTAIN ACCENTOR.

Prunella montanella.

Several of these birds with Dunnock-like behaviour, were seen between 6,500 ft. and 7,500 ft. feeding on wet ground beside rivulets derived from melting snow patches.

3. TWITE.

Carduelis flavirostris.

Present on 29th and 30th April in flocks of about thirty birds. They were feeding on marshy ground below the melting snow patches around 6,500 — 7,000 ft. A female was obtained, the skin of which is in the Iraq Museum of Natural History.

4. CRIMSON-WINGED BULLFINCH.

Erythrospiza sanguinea.

A single bird was observed by Naylor and seems almost certainly to be assignable to this species. This, however, was a brief sight record and as such, requires confirmation.

ON A RECENT ORNITHOLOGICAL EXCURSION IN IRAQ MADE BY Dr. MAKATSCH (May 28 — June 9, 1957).

BASHIR E. ALLOUSE,

Director, Iraq Natural History Museum.

Early in 1957, an agreement was reached between the well known German ornithologist and oologist, Dr. Wolfgang Makatsch, and an Austrian friend Dr. Alfred Micholitsch, who is an enthusiastic bird lover and photographer, to plan and finance a short excursion to the southern marshes of Iraq with a view of studying and photographing bird life during the breeding season. The idea was communicated to me as an active ornithologist in Iraq and director of the Natural History Museum, to give my advice and comments on certain problems involved. My reaction was decidedly encouraging and offered assistance by all possible means. To achieve the best results of such an excursion, and especially when breeding birds are the main object of observation, ample time is a necessary element for success. Unfortunately, both Dr. Makatsch and Dr. Micholitsch arrived at Baghdad on 28th of May and only Dr. Makatsch managed to stay to 9th June, with the Museum's representative, Mr. Khalaf Hannoun Al-Rubaiei In spite of the limitations of time, Dr. Makatsch's experience in field ornithology enabled him to get the most out of his short trip, and succeeded in collecting a number of clutches and nests.

Dr. Makatsch arrived in Basra on May 31 and stayed through June 1, during which time he went south to Abul-Khasib and east to the palm groves. On June 2 he travelled northwards to Qalat-Saleh and stayed there through June 6. On June 7 he was at Amara, and late in the day returned to Basra, and proceeded back to Baghdad on June 9, to stay one day only and leave on June 10.

The following observations and data are drawn from Dr. Makatsch's diary, and I publish them hereunder with his kind permission and approval.

SYSTEMATIC LIST

1. LITTLE GREBE. *Podiceps ruficollis iraquensis.*

Dr. Makatsch received on 3rd June two eggs of this bird from fishermen in a small marsh, some 8 kms. south-west of Qalat-Saleh.

2. PELICAN (White?). *Pelecanus* (probably *onocrotalus*).

Far in little pools of brick factories, south of Amara, Dr. Makatsch spotted on June 7, a number of Pelicans which he could not identify. Only the White Pelican breeds in the south, and the birds seen may belong to this species.

3. GOLIATH HERON. *Ardea goliath.*

Two birds seen on June 3 in a marsh near Qalat-Saleh, where they possibly breed.

4. GREY HERON. *Ardea cinerea.*

Few seen on June 3 in the same marsh near Qalat-Saleh.

5. PURPLE HERON. *Ardea purpurea.*

Few seen by the road between Basra and Qalat-Saleh, and in the marshes nearby on June 2 and 3.

6. BUFF-BACKED HERON. *Egretta ibis.*

One bird seen on June 3 in the same marsh near Qalat-Saleh.

7. LITTLE EGRET. *Egretta garzetta.*

Two birds seen by the road from Basra to Qalat-Saleh on June 2.

8. SPOONBILL. *Platalea leucorodia.*

A flock of 10-12 birds were flying in the direction of the Tigris at Qalat-Saleh on June 5.

9. SPARROW-HAWK. *Accipiter nisus* (probably *nisus*).

The breeding of this bird in our area was definitely proved by Dr. Makatsch who saw it nesting in a palm tree in the vicinity of Qalat-Saleh on June 5. The nest was about 10 m. high and contained 4 eggs in an advanced state of incubation. He saw another bird in the same locality on June 6.

10. MARSH HARRIER. *Circus aeruginosus.*

Seen at Qalat-Saleh on June 2, and at Amara on June 7.

11. BLACK PARTRIDGE. *Francolinus francolinus.*

Very common and resident at Qalat-Saleh, where Dr. Makatsch saw and heard many birds on June 5 and 6.

12. PURPLE GALLINULE. *Porphyrio poliocephalus.*

A bird was seen flying from reed beds in a little swamp to the south west of Qalat-Saleh on June 3.

13. WHITE-TAILED PLOVER. *Chettusia leucura.*
Seen near Amara on June 7.

14. RED-WATTLED LAPWING. *Lobivanellus indicus.*
Seen near Qalat-Saleh on June 2.

15. BLACK-WINGED STILT. *Himantopus himantopus.*
Seen at Amara on June 7.

16. CASPIAN TERN. *Hydroprogne caspia.*
Two birds seen at Basra — Qalat-Saleh road on June 2.

17. COMMON TERN. *Sterna hirundo.*
Few seen in the vicinity of Qalat-Saleh on June 2.

18. WOOD PIGEON. *Columba palumbus.*

Very common at Qalat-Saleh and Amara where it breeds in the palm gardens. On June 5, Dr. Makatsch collected two fresh eggs from a nest some 10 m. high in a date palm tree.

19. TURTLE DOVE. *Streptopelia turtur.* (probably *arenicola*).

Very common from Basra to Amara. On June 5, Dr. Makatsch collected two fairly fresh eggs near Qalat-Saleh from a nest built in a date palm tree about 2 m. high, and saw another nest with two eggs about to hatch.

20. INDIAN RING-DOVE. *Streptopelia decaocto.*

Very common and resident from Basra to Amara, and most parts of Iraq.

21. PIED KINGFISHER. *Ceryle rudis.*

Very common at Qalat-Saleh where Dr. Makatsch saw on June 2 two groups of 22 and 30 birds sitting on telegraph wire, especially between Basra and Qurna. He also saw it at Amara on June 7. It certainly breeds in the locality.

22. WHITE-BREASTED KINGFISHER. *Halcyon smyrnensis.*
Seen at Amara on June 7.

23. PERSIAN BEE-EATER. *Merops superciliosus persicus.*
Very common and breeding in colonies from Basra to Amara, and elsewhere in Iraq. Some nest holes were excavated in level ground. Three nest holes were dug by Dr. Makatsch on June 4 near Qalat-Saleh. One contained a single fresh egg, and the two others 5 eggs each, only partly incubated. Earlier in May 30 he collected two clutches from a colony at Baghdad — Yusufiyah road with 5 and 2 eggs, all fresh.

24. ROLLER. *Coracias garrulus.*
Fairly common at Qalat-Saleh and Amara in June. Earlier on May 30, two clutches were collected by Dr. Makatsch from a small colony in a cliff overlooking a small pool by the road between Yusufiyah and Mahmudiyah. One of the clutches contained 6 eggs and the other 2 eggs, and all were fresh.

25. INDIAN ROLLER. *Coracias benghalensis.*
Single birds seen at Qalat-Saleh on June 4 and 6.

26. CRESTED LARK. *Galerida cristata.*
Very common and resident from Basra to Amara, as well as in many parts of the country.

27. SWALLOW. *Hirundo rustica.*
Very common and breeding from Basra to Amara in June.

28. HOODED CROW. *Corvus corone* (probably *capellanus*).
Very common and breeding in palm groves from Basra to Amara (June).

29. WHITE-EARED BULBUL. *Pycnonotus leucotis.*
Common and breeding from Basra to Amara. At Basra, on May 31, Dr. Makatsch saw a pair feeding their young, and on June 5 he saw 3 nests at Qalat-Saleh. One of the nests contained one fresh egg, and the nest was placed some 2 m. in a date palm tree; the other contained 2 eggs, one just hatched and the other in an advanced state of incubation, and the nest was placed in a bush some 1.5 m. high; the third had 3 fairly fresh eggs. On June 6 another nest was found in a rose bush (1.20 m. high) and contained 3 incubated eggs.

30. REED-WARBLER. *Acrocephalus arundinaceus.*

Dr. Makatsch heard the call of some Reed Warbler, which he believed to be *arundinaceus*, in a marsh near Qalat-Saleh on June 3. Both this species and the Babylonian Reed-Warbler (*A. griseldis*) are reported to breed in the marshes of southern Iraq.

31. OLIVACEOUS WARBLER. *Hippolais pallida elaeica.*

Very common from Basra to Amara. Dr. Makatsch saw a nest at Qalat-Saleh (June 2) placed in a fig tree some 1.5 m. high, with one egg and 2 chicks. On June 4 he found 3 nests in the same locality, two of them had 3 eggs each, and one had 1 egg only. One of the former was in a small date palm tree, about 4 m. high.

32. RUFOUS WARBLER. *Erythropygia galactotes.*

Very common and breeding from Basra to Amara, where a number of nests were found by Dr. Makatsch. A nest at Qalat-Saleh on June 4 contained 5 fairly fresh eggs, placed in a bush about 1 m. high; another on June 5 contained 3 eggs one of which was strongly incubated, the other had a dead embryo, and the third was unfertilized and the nest was placed close to the ground; a third nest was on the ground and had 1 egg; a fourth nest was in a date palm tree, placed some 80 cm. high, had 2 eggs plus 3 fledglings. On June 6 another nest was found to contain four newly fledged. The last nest was 13 cm. and 7.5 cm. across on the outer and inner diameters respectively, and 5 cm. deep. The structure was of fine grass, fibers and bits of palm leaves, lined with feathers and reptilian scales. The bird was also abundant at Amara on June 7.

34. STREAKED WREN-WARBLER. *Prinia gracilis.*

On June 4, Dr. Makatsch found a nest of this bird at Makhria village, near Qalat-Saleh. The nest contained 5 fresh eggs.

33. MESOPOTAMIAN BABBLER. *Turdoides caudata altirostris.*

The bird was first seen by Dr. Makatsch at Qalat-Saleh on June 2 in a date palm tree. On June 6 he discovered a nest in a small village near the town which contained 4 fresh eggs, and the nest was placed in a small palm tree about 2 m. high.

35. HOUSE SPARROW. *Passer domesticus.*

Very common and resident everywhere near and in the villages and larger cities, where many nests could be found.

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نشرة رقم (١٣)

(تاريخ النشر : ١ ايلول ١٩٥٧)

مطبعة الرابطة ـ بغداد
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