

NORTH AFRICAN AND OTHER ITINERARIES: 1961-1975

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ABSTRACT. Itineraries are given of the author's botanical journeys in N Africa (Morocco, Algeria, Tunisia, Libya) between 1969 and 1975, undertaken to improve the representation of this region's flora for Mediterranean studies in British herbaria. Also included are itineraries in S Iran (1974) and Europe—Austria, Greece, Italy, Malta, Portugal—from 1961 to 1974. The series of numbers collected on each journey is cited as are the herbaria in which the specimens are conserved. The author's N African collections (1939-1975) (including Egypt) now total about 12,600 gatherings.

While working on the taxonomy of Middle East floras, I have been very conscious of the inadequate representation of the N African flora in British National herbaria, particularly Edinburgh. Botanists working on the flora of the Iberian peninsula, Sicily and Crete must be even more concerned with the strong floristic affinities between these areas and N Africa. Such links concern not only the Mediterranean and mountain floras, but also those of the Mauritanian steppe and (at least so far as SW Asia and the Canaries are concerned) the desert (cf. Davis & Hedge, 1971).

North Africa has, of course, been rather well explored by distinguished European botanists but, with Maire's herbarium in Montpellier (MPU) and Pampanini's Cyrenaican collections in Florence (FI), the fact remains that the representation of the NW African and Libyan flora in British collections is inconveniently poor compared with that of other parts of the broad Mediterranean area. The more monographic the research, the more desirable it is that Mediterranean genera should be adequately studied throughout their range if stable classifications are to be achieved. Many species were, in fact, first described from N Africa before they were recognised in southern Europe or SW Asia, so that the circumscription and correct naming of species may depend on the availability of good N African material.

The most effective and certainly the most enjoyable way to help remedy the N African deficiencies in our National collections seemed to be not to exchange specimens, but purposefully to collect material in N Africa, where adequate field notes could be made. This account stems from that decision, and covers journeys made in Morocco, Algeria, Tunisia and Libya between 1969 and 1975. Earlier collections from Morocco (1939, encumbered by whooping cough) and Egypt (1943-45) are summarised in an earlier paper (Davis, 1955). The present article also contains my itinerary in S Iran (1974), and brief notes on small collecting trips in Europe (1961-1974), often on the way to Turkey or N Africa.

The total number of gatherings made by the author in N Africa (Morocco to Egypt, 1939-1975) is about 12,600. At Edinburgh these have been named to genus or species. The Regius Keeper will be glad to consider sending genera on loan to taxonomists undertaking critical revisions. Some duplicate material of these collections is still available for exchange. A collection of colour transparencies, mostly correlated with herbarium specimens, is kept at the Royal Botanic Garden.

The range of herbarium numbers collected is cited at the beginning of each itinerary, followed by the herbaria (using standard contractions given in *Index Herbariorum* ed. 6, 1974) where the specimens are deposited, in order of priority of sets. On my N African labels botanical districts have been denoted by capital letters, as follows: Morocco, those used in Jahandiez & Maire, *Catalogue des Plantes du Maroc* vol. 1 (1931); Algeria, the areas recognised in Quézel & Santa, *Nouvelle Flore de l'Algerie* vol. 1 (1962); Libya, T for Tripolitania, C for Cyrenaica, the dividing line being 'Marble Arch'. For Tunisia (1975), N signifies the wooded Mediterranean sector, mainly north of the Mjerda river and between Tunis, Cap Bon and Zaghouan; C the steppic plateau (El Kef, Maktar, Kasserine, etc.); E the plain extending from the east foot of the plateau to the sea; S the desert area south of Gafsa. For maps used on journeys, see p. 129.

NORTH AFRICA

MOROCCO 1969. *P. & Jeremy Davis* (no relation), *D.* 48200-49417 (BM; E; NY; ULT).

Marrakech (March 16) - Essaouira (Mogador) and down the Atlantic coast: Smimou - Tamri - Cap Ghir - Imouzzet des Ida Outanane (Mar. 20) - Ait Melloul - Wadi Massa - Tiznit - Tizi-Mighert pass - Goulmime (Mar. 22) - Oued Dra - Tan Tan plage - Oued Assaka (25 km W of Goulmime) - Bou Izakarne - Tiznit (April 25).

Through Anti-Atlas: Tiznit - Tafraoute (Mar. 27) - by appalling *piste* through Titeki - Ait Abdullah - Azoura to Irherm (1750 m) and down to Taroudant (Mar. 29). Taroudant - across Sous plain to Tizi-n'Test, returning to Taroudant then to Aoulouz - Taliouinine - Tazanakht - Tizi-n'Bachkoum - Ouarzazate (Apr. 1). Ouarzazate - Dades gorge near Boumalne (Apr. 3) - Todra gorge near Tinerhir - Ksar-es-Souk (Apr. 4) - desert near Erfoud - Ksar-es-Souk (Apr. 6).

Northwards to Middle Atlas: Ksar-es-Souk - Ziz gorge - Rich - Midelt - Col du Zad - Ifrane - Azrou (Apr. 8). Azrou - Khenifra - Kasba Tadla - Beni Mellal - Marrakech (Apr. 10). Excursions from Marrakech to Ourika valley (Apr. 12), Jbilet hills (S of Marrakech) and Asni. Marrakech - El Jadida - Azemmour (Apr. 16) - Tanger.

MOROCCO 1970. *Davis* 50640-50815 (E; BM; RNG).

August 13: Tanger and Cap Spartel. Excursion to the Rif range: Tanger - Xauen (Chechaouen) - Cherafat - Bab Beret - Bab Besen - Ketama; climbed Dj. Tidiquin (Aug. 18); Tleta Ketama, returning via Cherafat to Tanger (Aug. 19). Excursions from Tanger to Forêt Diplomatique (Aug. 23, between Cap Spartel and Asilah), Dj. Mousa above Younes (Aug. 25, W of Ceuta), Pointe Cires, and Asilah.

MOROCCO 1971. *Davis* 50990-51445 (BM; E; RNG).

April 8: excursions from Tetuan to the lower part of Oued Laou. Apr. 9: Tetuan to Restinga and Dj. Mousa. Apr. 10: Tetuan to Talimbote (upper Oued Laou). Apr. 11: Tetuan - Xauen - Ouezzane - Beni Ammar - Fes - Dj. Jalaph above Fes (Apr. 12) - Dj. Zerhoun above Moulay Idriss - Fes -

NW foot of Dj. Tazzeka – Taza (Apr. 14) – Aknoul – Al Hoceima (Apr. 16) – Oued Nakor – Midar – Nakor – Berkane – mts SW of Berkane – Oujda (Apr. 20). Continued into Algeria.

Davis 53461–53478 (E).

December 27–28: Ourzazate – Zagora – Tagounite.

MOROCCO 1972. *Davis* 53480–54428 (E; BM; RNG; HUI).

Agadir dunes (Mar. 18)–Oued Massa–Sidi Mousa (near Tiznit)–coast track to Ifni (Mar. 20)–Goulmim–Oued Dra–Tan Tan–Oued Chebeika (c. 30 km S of Tan Tan place, Mar. 22)–Tan Tan–Goulmim–Bou Izakarne–Agadir (Mar. 24); excursion to Immouzer des Ida Outanane (Mar. 26); excursion to mouth of Oued Massa (Mar. 27); Tiznit – Tafraoute (Mar. 28), excursion to Amelm valley; Tafraoute – Ait Baha – Titeki – down to Biougra and Agadir (Mar. 30); excursion to mouth of Sous river S of Agadir; excursion to Cap Ghir (Rhir) and Tamri. Agadir – Taroudant – Irherm (Anti-Atlas) – Taroudant (Apr. 2). Sous river near Taroudant to Tizi-n'Tichka above Taddert (Apr. 4) – Marrakech (Apr. 5); excursion to Ait Ourir (limestone), Apr. 6; Marrakech – Chemaica salt lake – Cap Safi and Cap Beddouza – Oualidia (Apr. 7) – Cap Blanc – El Jadida – Oued Cherrat – Rabat; excursion inland to Rommani – Tedders – Oulmès – Maaziz – Rabat (Apr. 11) – Forêt de la Marmora (between Sidi Allal-Bahraoui and Kenitra) – Oued Mellah NE of Casablanca (Apr. 13).

MOROCCO 1973. *Davis* 54570–55617 (E; BM; MO; RNG).

July 2: Tanger – Tetuan. Dj. Ghorgez (Beni Hosmar) above Tetuan (July 3) – Xauen, Dj. Tisouka above Xauen (July 5). Xauen to Talambot (S of Oued Laou) and to Bab Besen (July 6) – Ketama. Excursion to El Jebha (July 7). Ketama – Taounate – Fes (July 8).

Middle Atlas: Fes – Immouzer – Michliffen – Ifrane (July 10). Dj. Hebri and Michliffen from Ifrane (July 11). Ifrane – Ras el Mar – Ain Leuh – Mirt – Beni Mellal (July 12).

High Atlas: Beni Mellal – Bin-el-Ouidane (dam) – Sidi Mohammed – piste to Zaouia Ahansal (July 13) – N side of Dj. Azourki – Zaouia Ahansal (July 14) by atrocious piste to Tilouguite and round E end of reservoir to Beni Mellal (July 15). Marrakech (July 16–18) with excursions to Oukaimaden; N side of Dj. Anngour near Oukaimaden (July 19), Table d'Orientation and Tizi Oukaimaden (July 20), returning from Oukaimaden to Marrakech. Asni – Imlil – on foot to Neltner hut (July 24); climbed Dj. Toubkhal (July 23), returning by Sidi Chamarouche to Imlil, Asni and Marrakech (July 24). Kenitra – Morhrane (crossing Sebou river towards sea) northwards to Moulay bou Selham (July 26) – Tanger.

In Morocco the Anti-Atlas east of Irherm, Dj. Siroua, the Upper Oued Dra and the desert south of Tan Tan would seem to deserve further exploration in a favourable spring.

Other recent Moroccan collections represented at Edinburgh are: E. K. Balls (1936); D. H. N. Spence (1951—see reference); J. C. Archibald (1962); Alexander & Kupicha (1972); Bramwell, Richardson & Murray (1972); Reading Univ./BM Exped. (1974—see reference).

ALGERIA 1971. *Davis* 51446-53460 (BM; E; RNG; HUJ).

Maghnia (April 21) to Tlemcen (Apr. 21), excursions to 30 km S of Sebdou and to Cascades d'el Ourit E of Tlemcen (Apr. 23). Tlemcen - Maghnia - Nedroma - through Monts des Traras to Honaïne and Beni Saf - Tlemcen (Apr. 24) - Bensekrane - Ain Temouchent - Grande Sebkhia d'Oran (Apr. 25). Excursions from Oran: Apr. 26 to Cap Falcon - Les Andalouses - Forêt de M'Sila - Dj. Murdjadjo - Oran (Apr. 27) - Misserghin - Bou Tlelis - rocks of Santa Cruz above Oran (Apr. 27). Oran - Arzew - Mostaganem - mouth of Oued Cheliff - returning to Mostaganem (Apr. 29) - Tenes (Apr. 30) - gorge 20 miles W of Tenes, returning to 15 km E of Tenes and to Cap Tenes (May 1). Tenes - El Asnam - Alger (May 2). Alger - Blida and foot of Dj. Chrea - Boufarik - Alger (May 4).

Alger - Beni Amran and Palestro gorge - Bouira - Tikjda (Dj. Djurdjura, May 7) - Bordj Bou Arreridj - Setif - Constantine - Azzaba - Annaba (Bône, May 8). Annaba - Seraïda and its beach - Annaba (May 10). El Kala (La Calle) - Annaba - Lac des Oiseaux - Annaba (May 12). Annaba - Guelma - Hamman Meskoutine - Batna (May 13) - excursions to 15 km on road from Batna to Constantine, and to Lambese from Batna (May 14) - Dj. Aurès, from Batna to Arris - Oued Roufi and Biskra (May 15). Biskra - Still (on road to Touggourt) - to 40 miles towards Oued, returning in sandstorm to Biskra (May 17). Excursion to barrage NE of Biskra. Biskra - El Kantara gorge - Batna (May 18) - Timgad - Dj. Chelia (between Bou Hamana and Medina - too early for flowers above 1700 m) - Batna (May 19) - Col de Telmet (W of Batna) - Batna (May 20).

Batna - Setif - Kherrata (May 21) - Dj. Babor (by terrible *piste*) - Kherrata (May 22) - Chabet el Akra (Kherrata) gorge - Kherrata (May 23) - Chabet el Akra (Kherrata) gorge to coast - Les Falaise - Mansouria (May 24) - Grotte Marveilleuse and foot of Oued Guelil - Cavallo (El Aouana) - Mansouria (May 25) - Les Falaise - Grotte Merveilleuse - Forêt de Guerrouch (May 28) via Barrage de Erraguene, Col de Selma and Cavallo (El Aouana) - Mansouria - Bejaia (Bougie, May 28) - Cap Cabon and Pic des Singes near Bejaia (May 29) - El Kseur - Adekar - Azazga - Tizi Ouzou - Alger (May 30).

Alger - Palestro gorge - Tikjda on S side of Dj. Djurdjura (June 3) - Bouira - Boghni - N side of Dj. Djurdjura near Tala Guelef (June 5) - Boghni - El Arba - Alger (June 6). Alger - Medea - Berrouaghia - Ain Oussera (Paul Cazelles) on Hauts Plateaux (Mauritanian steppe) - Hassi Bahbah - Djelfa in Saharan Atlas (June 7) - by *piste* 45 km SW of Djelfa, via Takesane forest house, returning to Djelfa (June 8) - excursion to 8 km W of Ain Mobed - returning across Hauts Plateaux through Chiffa gorge to Alger (June 11).

ALGERIA 1975. *Davis* 57910-59548 (E; BM; RNG; AL).

Ghardimaou (Tunisian) frontier (May 19) - Zanouria - Taoura Ouenza - Souk Ahras (May 20) - Bouchegouf - Guelma - Oued Zanati - Ain Abid - Constantine (May 21) - Grarem - Ben Haroun gorges S of El-Milia - Mila (May 23, slept in French convent) - Fedj-M'Zala - Djemila (May 23) - Beni Fouda - Setif - El Achir - Mansoura - Bouira (May 24) - Oued Isser - Tablat - Col des Deux Bassins - Larba - Blida - Alger (May 25).

Alger (May 29) – Tipasa – coast road round Dj. Chenoua to Cherchell, returning to Tipasa (May 29); hazardous *piste* through Tizi Franco forest to Miliana, then to Theniet el Had in Massif de Ourasenis (May 30) – Rond-Point des Cèdres – Theniet el-Had (May 31) – Laayoune – Khemisti – Ain Dzarit – across Hauts Plateaux, via Ain Dehab and Hassiane-ed-Dih to Aflou in Dj. Amour of Saharan Atlas (June 1). Excursions to 12 km N of Aflou and about 70 km to Laghouat. Aflou – by *piste* to hills N of El Ghicha (El Richa), thence via Boualem to El Bayadh (June 4), crossing Hauts Plateaux (Mauritanian steppe) via Bougtob – Chott Ech Chergui to Saïda (June 5) – Merine – Telagh – Sidi Ali Ben Youb – Ben Badis – Ouled Mimoun – Tlemcen (June 7).

Tlemcen – Lalla Setti rocks (above Tlemcen) – Col des Zarifète – Col d'Haïr – Beni Bahdel dam – Tlemcen (June 8) – Sabra – Maghnia – southwards on El Aricha road to Forêt des Col de Krorchef, across the limestone plateau to Beni Bahdal dam and Oued Tani to Sabra and Tlemcen (June 9). Tlemcen – Sidi Bel Abbes – Mascara – El Asnam (June 10) – Sendjas – Ain Lellou – Bou Caid – N foot of Dj. Ouarsenis – Bordj Bounaama, returning through El Asnam (June 11) to Alger (June 12).

Alger (June 14) – Blida – Chrea (June 15) – Alger – Tizi Ouzou – Makouda – Tigzirt-s-Mer (June 17) – Cap Tedles E of Tigzirt – Makouda – Tizi Ouzou – Boghni (June 18). Dj. Djurdjura: Boghni – Dj. Heidzer above Tala Guilef – Boghni (June 19) – Tala Guilef – Boghni (June 20) – Ouadhia – Tizi Kouilal pass – Tikjda (June 21) – Ras Temidouine – around Tikjda (June 22) – Tizi Kouilal – west slope of Lalla Khedija – M'Chedallah – Bouïra (June 23) – Lakhdaria – Zouggar – Alger (June 24). Excursion to marshy plain W of Boufarik (between Ben Salah, Pont des Zouaves and Oued el Alleug) – Ruissseau des Singes in Chiffa gorge – Alger (June 28) – beach between Sidi Ferruch and Zeralda (June 29) – Alger.

So far as collections in Britain are concerned, Algeria remains much less well represented than Morocco. The deciduous forest flora is particularly good in the cloudy coastal ranges between Alger and the Tunisian frontier. The cedar forests are floristically much richer than those in Morocco, comparing very favourably with those in S Anatolia. Not knowing, when I first went to Algeria (1971), if and when I might be able to return, I made the mistake of attempting to sample the Tell throughout its whole east-west extension (c. 1000 miles) in six weeks. On my second visit I was mainly concerned to fill in important gaps by visiting areas I did not have time to collect in previously, and was thus again involved in covering great distances. Future collectors might find it more rewarding to cut down on the amount of east-west travel by making 3 separate visits, and on each one concentrating on a different sector: the west, based on Tlemcen, Ain Sefra and Mostaganem; the centre, based on Alger, Djelfa and Bejaia; the east on Constantine, Annaba and Tebessa. One could then do more justice to the Mediterranean ranges of the Tell, the Hauts Plateaux and the Saharan Atlas. I regret, for instance, that I did not have time on either of my journeys to visit the vicinity of Ain Sefra, Bou Saada, Laghouat, Collo, Mts de la Medjerda (Souk Ahras to El Kala), Tebessa and the Nementcha hills, or to see enough of the hills east of Mostaganem and N of Oued Chélif, Djelfa (surprisingly forested with *Pinus halepensis* and *Quercus ilex*), the Aurès massif, and the ferny *Quercus*

afares forests (now a national park) between Bejaia and Azazga; old mine fields near the Moroccan border hampered collecting on the flowery limestone plateau of the Tlemcen massif south of Maghnia; indeed, the Algerian frontier regions bordering both Tunisia and Morocco deserve further exploration.*

It should be pointed out that Algeria, despite an extensive road network, is more difficult to travel in than tourist-scarred Morocco and Tunisia, and more expensive. There are severe restrictions on the export of botanical collections (living or dried), and permission should be obtained *before* going to Algeria. Collectors should consult the Algerian Embassy in their own country and their own Consulate in Alger on the current formalities required by the Algerian Ministry of Agriculture.

TUNISIA 1968. *Davis* 48000-48120 (E).

September 9-12: Sahline and Monastir. Gabes (Sept. 15). Matmata (Sept. 16). El Djerid, between Kebili and Mansoura oases (Sept. 18-19). Sousse - Monastir (Sept. 21).

TUNISIA 1975. *Davis* 56730-56799; *Davis & Jennifer Lamond*, *D.* 56800-57915A; *Davis* 57910B-57921B (E; BM; RNG).

Gammarth (N of Tunis, April 26). Cap Bon peninsula: Tunis - Korbous - Sidi Rais - Menzel Temime - Kelibia (Apr. 27) - El Haouaria - Cap Bon - Kelibia (Apr. 28) - Korba - Mornag plain SE of Tunis - Dj. Sidi Salem - Zaghuan - El Fahs - Sbikha - Kairouan (Apr. 30) - 10 km NE of Kairouan - Kairouan - Msaken - El Djem - Souassi - Msaken - Kairouan (May 2).

Kairouan - Dj. Ousselat (Michelin map, road C99) - Ousseltia - E. Kesra - Maktar (May 3) - Sbiba - Sbeitla - Kasserine (May 4) - Feriana - Oued el Kebir - Gafsa (May 5) - El Guettar - *piste* to Dj. Hachichina (on way to Kebili) - El Guettar - Gafsa (May 6) - Metlaoui - collecting near phosphate mines to north and to Gorges de L'Oued Seldja - Gafsa (May 7) - Kasserine (May 8) - N side of Dj. Chambi - Thala - Tadjerouine - El Kef (May 9) - TebourSouk - Dougga - Bou Salem - Jendouba (Souk el Arba, May 10).

Jendouba - Bulla Regia - Beni Metir dam - Ain Draham - Tabarka (May 11) - Ain Sebaa to Jebbara beach - Tabarka - Oued Kebir plain S of Ain Drahan - Hammam Bourgiba - Tabarka (May 13) - Nefsa - through Mogod hills between Cap Serrat and Mateur (Michelin map road C58) - Tunis (May 14-17, with local excursions) - Beja - Jendouba (May 18), continuing into Algeria.

Considering the ease and pleasure with which one can move around in Tunisia, its varied flora is very under-represented in Britain's herbaria. The unspoilt hill town of El Kef would make an excellent base for exploration of the plateaux, where extensive limestone and sandstone pavements support a distinctive flora of taxonomic and ecological interest. The southern part of

* Since this was written, Quézel & Bounaga (in *La flore du bassin méditerranéen*, 1976 p. 128) have published a map showing the state of floristic knowledge of Algeria and Tunisia; in the same volume, Sauvage has treated the exploration of Morocco, and Boulos that of Libya and Egypt.

Tunisia has recently been worked by Le Houérou (1959). If the botanist faces drying problems in Tunisia (as well he might in the rainy *Quercus* forests of Tabarka and Ain Draham) he can cheaply supplement his paper supply in Tunis. A coarse, extremely absorbent, grey paper, made from Esparto grass (*Stipa tenacissima*) can be bought (from S.A.T.U.P.A.C., 14 Ave. Hedi Chekir, Tunis) for about 10p per kilogram.

LIBYA 1970. *Davis* 49450-50596. (E; K; RNG; ULT). Accompanied by Dr Loutfy Boulos.

March 10 & 12: Tripoli, near University of Libya (Mar. 10, 12 & 13) - Azizia - Rhnem - Iefren in Dj. Nefoussa (Mar. 15) - Giado (Mar. 15) - piste to 108 km SE of Giado - Giado (Mar. 16) - Ain Zarga near Giado (Mar. 17) - Iefren - Garian - down Dj. Nefoussa escarpment to Tripoli (Mar. 18). Excursion to Sabratha from Tripoli (Mar. 20).

Tripoli - Khoms - Leptis Magna - Misurata (Mar. 22) - Bu-Gren - Buerat el Hsun - Sirte - Marble Arch - Ajedabya - Benghazi (Mar. 24) - El Abiar - El Merj - Baiada - Razzo - El Beida - Oued Kouf - Cyrene (Shahat) (Mar. 25) - near ruins of Cyrene (Mar. 26) - Wadi Roseyt - Apollonia (Marsa Susa) - Ras Hilal - Wadi Qala'a - Cyrene (Mar. 27) - Wadi Kouf W of El Beida - Cyrene (Mar. 28) - Gubba - Labrag by Roman aqueduct - Cyrene (Mar. 29) - Derna - Omm-Rezem - Timimi - Martouba - Derna (Mar. 30) - Oued Derna - Derna (Mar. 31) - Cyrene - Faida - Slonta - Marawa - Tecnis - El Merj (Barce, April 2) - Tolmeitha - Tokra - Coefia - Benghazi (Apr. 3). Returned to Tripoli by same route round Gulf of Sirte. Collected near Tripoli airport on Apr. 4.

Dr Loutfy Boulos collected under his own numbers, except for the last day at Tripoli airport (*Davis & Boulos*, D. 50575-50596). I formed the impression that the Djebel Nefoussa deserves more exploration (especially its N escarpment and Nalut), and two areas in Cyrenaica: the inaccessible coast between Tolmeitha and El Hania, and the high part of the Gebel Akhdar south of the Faida-Tecnis road (and no doubt its southern slopes between Mekhlil and El Abiar). Our visit was too early for some of Cyrenaica's endemic perennials. The excellent Cyrenaican collection of Sandwith & Simpson (1941, see reference) is at Kew, and K. Guichard's Libyan material at the British Museum (BM). A bibliography of the Libyan flora has recently been published by Boulos (1972) and a check list of recorded species by Keith (1973).

The University of Libya (Tripoli) provided general facilities throughout my visit.

IRAN 1974

Davis & M. Bokhari, D. 55620-56623 (E; Pahlavi University, Botany Dept., Shiraz; K; MO).

Excursions by Land-Rover from Shiraz, collecting mainly in the deciduous woodland belts (*Quercus brantii*, *Amygdalus scoparia*, etc.) and near the Persian Gulf. March 19: Shiraz - Kuh-e-Sabz Pushan (near tomb of Imam Zadeh Ishaq) with Professor G. Pontecorvo. Mar. 20-23; Shiraz - Kazerun -

Masiri – Basht – Do Gonbadan (Doğubaydan) – Behbahan – Omidiyeh (dunes) – Behbahan – Məru – Masiri – Kazerun – Shiraz. Mar. 26–April 3 Shiraz – Kazerun by old road – Rudak – Borazjan – Khormuj – Kaki – Dayyer (on Gulf) Kangan – Taheri – Bandar Lengeh (Mar. 29) – Kahurestan – Lar Jahrom – Qir (by old road) – Firuzabad – Khergegh village on road to Farashband (*Cupressus sempervirens*, wild) – Firuzabad – Kavar – Shiraz. Apr. 7–12 (accompanied by Pontecorvo); Shiraz – Kazerun – Babameydan – Yasuj – Sisakht – W slope of Kuh-e-Dinar (reaching 2650 m) – Yasuj, with excursion above Vaz (Varag) on road to Ardakan (Apr. 9). Persistent rain forced a retreat to the Gulf. Yasuj – Masiri – Bishapour – Borazjan (Apr. 10) – SE of Bushehr (Bushire) to environs of Bashi (eroded badlands) – Borazjan – Shiraz (Apr. 12).

Some Irano-Turanian species found in SE Anatolia extend as far down the Zagros as Firuzabad SE of Shiraz. I was surprised to find how many Mediterranean annuals reach the head of the Persian Gulf and neighbouring foothills, mostly as field weeds, on shady rock ledges or in the protection of *Zizyphus* scrub.

The journey was undertaken with the generous assistance of the Dean of Faculty of Science and the Botany Department in Pahlavi University, Shiraz. Following an exceptionally snowy winter, spring in the mountains was unusually late.

EUROPE

AUSTRIA 1967. *Davis* 47897–47997 (E).

Burgenland; Neusiedler See and hills above Hundsheim (July 16).

FRANCE 1974. *Davis* 54430–54624 (E).

Excursions from Montpellier: Hérault (Signac, gorge de l'Hérault, St. Jean de Pos (June 5). Cevennes: Aigouale (June 6).

GREECE (North) 1966. *Davis* 46796–47896 (E).

Stavros – Neochorion (August 14) – Longos peninsula (Aug. 15) – Salonika – Metsovo – Ioannina (Aug. 18) – Vrossina – Parga (Aug. 20).

GREECE (Corfu) 1972. *Davis* 54430–54624 (E; RNG).

July 9–20; Kassiope, Mt Pantocrator above Spartilas, Ipsos to Ag. Markos; Pelekas, Kanoni, Paleokastrizza, Limni Korission near Linia.

ITALY (North-west) 1961. *Davis* 34404–34427 (E).

May 25: south of Viareggio; distr. Genoa, Portofino Vetta.

ITALY (Sicily) 1964. *Davis* 40000–40244 (E; RNG).

Palermo area: Rocca Busambra above Ficuzza (August 14), San Martino (Aug. 15), Polizzi Generosa (Aug. 17). Madonie area: Monte Mufara between Polizzi and Rifugio Marini (Aug. 17–18). Trapani area: Erice (Aug. 20), islands of Marettimo and Levanzo (Aug. 21–22), Segesta (Aug. 25), salines SW of Trapani (Aug. 27), Marsala (Aug. 28). Agrigento (Aug. 29) – Modica (September 5) – Monte Pellegrino (Palermo, Sept. 7).

ITALY (East) 1966. *Davis* 47864–47896 (E).

Brindisi – Mt Gargano (August 23) – Campomarino (Aug. 24).

MALTA 1970. *Davis* 49420-49449; 50598-50632 (E; K; RNG).

Oued Babu S of Qrendi, Attard (March 3). Mellieha and Dingli cliffs (April 11, on return from Libya).

PORTUGAL 1971. *Davis* 50820-50989 (BM; E; RNG; HUJ).

Lisbon - Serra da Arrabida - Setubal (March 29) - Alcacer do Sal - Serra de Grandola - Praia Odeceixe - Carrapateira - Sagres (Mar. 30) - Martinhal - Cabo de S. Vicente (Cape St Vincent) - Sagres (April 1) - Serra de Monchique - Praia da Rocha (Apr. 3) - Monte Gordo near Vila Real de S Antonio - Cadiz (Spain, Apr. 4).

MAPS USED ON N AFRICAN & IRANIAN JOURNEYS

Morocco: French maps

Institut Géographique National, Paris. 1:500,000, sheet NH-29-XXIII-Ia, 'Jbel Toubkal' (undated). 1:500,000 sheet, 'Rabat', 1954.

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