

63 pls. (colored). (Professor ESAKI has kindly advised the author that there were two prior printings of this work, *i.e.*, on 5 June 1954 and on 20 July 1954, each without the English title. Delete Esaki, 1955 entry in bibliography [1956].)

The following corrections should be made to the bibliography:

- p. 30, line 22: "American" should be "America".
- p. 31, line 27: "1871" should be "1861".
- p. 31, line 30: "Lepidoptterorum" should be "Lepidopterorum".
- p. 31, line 33: insert a comma after "I".
- p. 31, line 46: "1866" should be "1868".
- p. 33, line 25: "Forster" should be "Foster".
- p. 33, line 27: "th" should be "the".
- p. 33, line 35: insert a comma after "46".
- p. 33, line 49: insert a period after "Acad".
- p. 34, line 5: after "2:" insert "pp."
- p. 34, line 8: "Charaxiidinae" should be "Charaxidinae".

Washington Corners, Mendham, N. J., U. S. A.

E S P E C I A L L Y F O R C O L L E C T O R S

(Under the supervision of JAMES R. MERRITT)

LEPIDOPTERA COLLECTING IN THE ATLAS MOUNTAINS OF MOROCCO

by COLIN WYATT

The Atlas Mountains of Morocco consist of three parallel ranges running WSW-ENE—the Middle Atlas in the north, some 200 miles long, which is mostly forested and has a predominantly Mediterranean fauna and flora except on part of its southeastern slopes, the High Atlas which runs eastwards from the Atlantic Ocean for some 500 miles in three main sections separated by two 8,000 ft. passes, which is alpine in character with its own rather special fauna and flora, and the Anti-Atlas to the southwest, which is predominantly desertic in character and is very poor in fauna and flora.

The Middle Atlas has an average height of about 5,500 feet, rising to peaks of 7,500 ft. or so, while the High Atlas averages around 10-12,000 ft. with peaks of over 14,000 ft. having a heavy snowfall in winter. The highest area is the Toubkal massif which has several peaks of over 14,000 ft., then follows the m'Goun massif in the centre, also rising over 14,000 ft., and finally the Ayachi massif to the east which only rises to about 12,500 ft. The Anti-Atlas rarely has snow on it, and then only on its highest peak, the 10,500 ft. Siroua.

The High Atlas forms an almost impenetrable barrier between the Mediterranean climate, fauna, and flora to the north, and the desert to the south whose flora and fauna show certain affinities to the purely African type. Entomologically the Middle and High Atlas ranges are the most interesting, and these I covered thoroughly from March to late May in 1949, and from April to August in 1950.

The first butterflies to appear are lycænids and pierids, the earliest being *Thestor mauretanicus* in late February in the foothills up to 5,000 ft. In the plains *Pararge ægeria* appears early in March, and shortly after it the distinctively N. African yellow pierid *Euchloe charlonia*, which is abundant everywhere. I once even found a female dead in the snow in March at 12,500 ft. in the m'Goun range. With it appears *Anthocaris belemia*, which otherwise only flies in southern Spain. Most of the northern Moroccan butterflies show close affinities with those of Spain, such as *Zerynthia rumina*, *A. belemia*, *Zegris eupheme*, *Euphydryas desfontanei*, *Melitæa ætherie*, *Satyryus priouri*, but there is also a small minority which have their nearest relatives in the Middle East, such as *Euchloe charlonia*, *Satyryus atlantis* (once regarded as a race of *S. mniszecchii*), *Philotes bavius fatma*, and the species of *Cigaritis* and *Apharitis*. *Z. eupheme* is really a Middle East species that presumably found its way into Spain via North Africa in some dim distant age when a land bridge existed. These many extraordinary relationships between Spain on the one hand and the Middle East on the other make one wonder which way the traffic was going — perhaps both ways.

Finally there are the purely African species such as *Teracolus nouma*, *Powellia adenensis doris*, *Parnara zelleri*, and the specialties of the Atlas, *Anthocaris falloui*, *Satyryus abdelkader*, *S. atlantis*, *S. colombati*, *S. hansii*, *Cœnonympha vaucheri*, *C. fettigii*, *Epinephele maroccana*, *Argynnis lyauteyi*, *Chrysophanus phœbus* (really a plains species but occurring close to the foothills), *Philotes vogelii*, *Polyommatus allardi*, *P. martini*, *Lysandra atlanticus*, *Sloperia mohammed*, *Adopæa hamza*.

But one is constantly reminded of the Mediterranean, especially in the Middle Atlas. Here, in the Ifrane district, the predominant butterflies in spring are *Z. rumina*, *E. eupheno*, *Callophrys rubi*, and *C. avis*, and hibernated *Polygonia c-album* and *Eugonia polychloros*. Many well-known central and northern European species fly everywhere later on, even into the High Atlas valleys, such as *Papilio machaon*, *P. podalirius*, *Satyryus stailinus*, *S. alcyone*, *S. briseis*, *Euphydryas aurinia*, *Melitæa phœbe*, *M. didyma*, *Zephyrus quercus*, *Polyommatus icarus*, *P. bellargus*, and many others. Five of these cross right over the High Atlas and come down into the barren Anti-Atlas and far into the desert oases: *P. machaon*, *Pontia daplidice*, *M. didyma*, *P. icarus*, *C. phlæas*.

I will now try to take each group of mountains separately. The richest by far is the Middle Atlas. This is an ancient volcanic range, and the cones of old craters, mostly crowned with groves of cedars, dot its 6,000 ft. plateau. On the northern slopes lie great forests of Cedars and *Ilex*, together with areas of Pines and Oaks, forming a wonderful parkland whose flower-spangled glades are alive with insects. In the spring Paeonies and Saxifrages flower everywhere, the lush valleys by the creeks are fringed with Poplars and Ash and Hawthorn, and only the occasional *Macacus* monkey and the howling of the jackals at night remind one that he is in Africa after all. The native population are Berbers, peaceful farmers and small herdsmen. There are several excellent north-south French paved roads, and a selection of rough dirt tracks run off

them into the wilder areas, but most are quite practicable for an automobile with a good ground clearance. I took a small car and a tent, camping out for the entire collecting season. I would buy my bread, butter, and eggs from the Berbers, and stock up with canned goods whenever I was near a village or township boasting a general store. Very often I had to carry my own water in two 2-gallon cans. Never once was I molested in any way, and I would leave my camp for hours on end, car and all.



Fig. 1. The village of El Kelâa m'Gouna, on the edge of the Sahara, with the 13,000 ft. m'Goun Range to the north. Typical of the southern (desert) slope of the range.

Along the southern edge of the main plateau, which is some 20-30 miles wide, lies a narrow transition belt between the Mediterranean and desert faunas, and its southern slopes, which fall into the wide and arid Moulouya valley, just north of the Ayachi massif of the High Atlas, are strongly desertic in character. Here in many places transitional forms of the butterflies appear, individuals in the same populations being now close to the Mediterranean form, now to the desert one. A case in point is *Melitæa didyma*, which at Ifrane is the large, bright, and strongly marked *mauretunica*. In the Moulouya Valley and south of the Ayachi flies the very small, pale, lightly spotted *deserticola*. But on the Taghzeft Pass, leading from the main plateau into the Moulouya Valley, flies an intermediate population of which about 60% are *occusus*, but 40% closer to *mauretunica*. At Ifrane and elsewhere on the plateau flies the uniformly dark *Satyrus abdelkader lambessanus*, while in the Moulouya Valley flies a race very close to the Algerian *nelvai*, with wide white

borders to the wings; on the pass flies a distinct race, *taghzefti* Wyatt, which shows mostly narrowish yellow-white borders to the wings, but of which some females and an occasional male are very close to *nelvai*, say 10%, while about 4% are all dark as in *lambessanus*. In the High Atlas the great chain of peaks forms an impassable barrier to all but the strongest fliers or the notoriously migratory species, so no intermediate forms exist—there the *S. abdelkader* are all *lambessanus*, while the *M. didyma* are a separate race but closer to *mauretanica*.

The most interesting butterfly of the Middle Atlas is undoubtedly *Philotes vogelii* Obth. First discovered by HAROLD POWELL, who for many years collected very extensively in North Africa for OBERTHÜR. It is only known from three localities all within ten to twenty miles of each other. Even in these it is restricted to an area of some five acres in extent, where its equally rare foodplant, *Erodium cheilanthifolium*, grows. It flies in mid-August, very low over the stony ground. While very different in appearance, its habits, as also its foodplant and habitat are very similar to those of the almost equally localised *Plebeius ramburi (idas)* of Spain. The larvæ are attended by a very small black ant and hide by day down near the roots. I was lucky enough to find four in July from which I finally bred one fine female on August 11. It is a very distinctive insect, unlike any other lycænid I know, and is almost unknown in collections. Next in interest comes the very lovely *Philotes bavicus fatma*, of which the nymotypical form comes from the Near East, with another form in Hungary in Europe. This is much more plentiful but also very local, only flying in grassy areas near the edge of the cedar forests where its foodplant, a giant, woolly-leaved *Salvia*, grows. The larvæ feed by day in the flower-heads and are easy to rear; the pupæ will often overwinter twice. Another fine "blue" is *Polyommatus martini*, which also flies in Algeria, in the Aurès Mts. Then comes a fine hesperiid, *Sloperia mohammed*, which is very local and few in numbers, flying in forest clearings where its foodplant grows. I never saw it on the wing but bred a fine series from larvæ taken in mid-June. These spin a sort of light cocoon in a fold of a leaf in which they aestivate through the hot month of July, taking no food until early August when they feed up rapidly and pupate, emerging in late August and September. Its spring generation "caid" flies in May. The finest of all Middle Atlas butterflies is *Argynnis (Mesoacidalia) lyauteyi* Obth., a magnificent species which some authors regard as a subspecies of *M. charlotta (aglaia)*. However, *lyauteyi* only flies in the Ifrane area of the Middle Atlas, and as there are no other subspecies of either it or *charlotta* anywhere in N. Africa, I am not entirely convinced of this. Its congener (for I am not a generic hair-splitter) *Argynnis auresiana*, which flies elsewhere in Morocco and Algeria, is probably more rightly regarded as a subspecies of the European *A. niobe*. Another fine species is the giant, bat-like satyr *S. abdelkader*, which frequents steep, dry hillsides where the Esparto grass grows, the males sailing up and down over the tall tussocks in search of the females. It is a very hard species to catch, for while it appears to be gliding slowly it is extremely wary, and the "blast" of wind at the stroke of the net seems to catch its wide wings and waft it suddenly away at the last moment.

The almost world-wide species *Papilio machaon* first appears in the northern plains in the huge form *maxima*, flying up into the cedar forests by Ifrane. In the plains it feeds on Fennel, but at Ifrane and in the desert on Rue. In the desert foothills and the Sahara oases flies the small, pale form *sabaræ*, but again, on the Taghzeft Pass and probably other similar areas flies a more intermediate form with pale wings and narrow tails which is similar to *sabaræ* but larger and brighter. *Zerynthia rumina africana* flies at Ifrane in plenty in early May, and about 10% of the females are the strikingly handsome deep orange dimorphic form "canteneri." *Papilio podalirius* feeding on *Prunus* and peach-trees, flies in the spring form "maura," and appears in summer in the superb long-tailed form "latteri."

The Moroccan specialty *Cœnonympha vaucheri*, the handsomest species of the genus, flies generally throughout the Middle Atlas, though often locally, in the pale form "annoceuri" Wyatt. It is plentiful at Annoceur and on the Taghzeft Pass, coming to feed on Sage and Thyme. *C. arcanioides* flies with it at Annoceur, and *C. fettigii*, a good species which some authors have tried to unite with the Spanish and S. French *C. dorus*, just overlaps with the last of *vaucheri* on the Taghzeft Pass.

Four other very local species of interest are *Anthocaris tagis mauretunica*, very scarce and local, *Pieris manni baroldi* Wyatt of which only 10 specimens are known apart from my series, also extremely local, *Lysandra atlanticus* Elwes, a very lovely "blue" closely allied to both *L. dorylas* and *L. albicans*, and the race *berber* of the latter species. All are closely related to Spanish forms.

Satyrus atlantis occurs locally but abundantly in the area in the pale race *colini* Wyatt; its nearest congener is *S. mniszeczii* from the Middle East. The Spanish *S. priouri* occurs very locally and only in isolated individuals in the large form *kebira* Wyatt; it is very hard to catch among the stones. The yellow form of the female, "uhagonis," is so far unknown from N. Africa.

The High Atlas also has several peculiar and distinctive species. It is a hard and barren landscape of high peaks and deep valleys. This is the home of nymotypical *C. vaucheri*, *S. atlantis*, *Melanargia ines jabandiezi*, and *E. maroccana*. The four most distinctive insects are *Pieris napi segonzaci*, *Satyrus arethusa aksouali* Wyatt of which only three specimens were known until 1950 and the only locality in N. Africa where it occurs, the fine large race *herakleana* of *Chrysophanus alciphron*, and *Polyommatus allardi*, of which the race *ungemachi* flies in the m'Goun massif in late April concurrently with *Glaucopsyche melanops alluaudi*. In the High Atlas the flora is more desertic in character, especially prominent being the round spiny cushions of the Leguminosæ. It is altogether a rougher and more severe landscape than the Middle Atlas, the only trees being a few scattered stands of *Ilex* and Thuri-ferous Juniper deep down in the valleys, and of course the walnuts planted around the villages. The only abundant vegetation is alongside the creeks and deep river valleys, and on the edges of the network of aqueducts which terrace along the hillsides near all the villages, by which the peasants irrigate their terraced crops of corn and rye. These mountains are the home of the Mouflon, a type of Bighorn Sheep.



Fig. 2. Asphodel and Lavender at 4,000 ft. at Asni, with the 12,000 ft. Aksoual Range behind. Typical of mediterranean flora on the northern slopes of the foothills of the High Atlas.

Finally the desert foothills of the High Atlas must be mentioned. These are purely deserts in character, but several large rivers flow out through them to lose themselves in the sands of the desert, and along these the Berbers have organised an extensive system of irrigation, even out into the flat desert which here lies about 3,000 feet above sea level. Here they grow rich crops of alfalfa, corn, rye, date palms, peaches, apricots, figs, and the roses from which they distill the perfume of attar of roses. Otherwise the main desert plants are the spiny bushes of Camel-thorn, beloved of the little

Tarucus theophrastus "blues," *Capparis* the Caper bush, foodplant of *Teracolus*, Mallows, Rue, and the inevitable spiny Leguminosæ. Here fly the pierids *A. falloui*, *E. charlonia*, and *Teracolus nouna* in its three broods, also *P. machaon*, *P. icarus*, *C. phlæas*, *M. didyma occasus*, *Hesperia armoricanus*, and the greatest rarity of Morocco after *P. vogelii*, the little Skipper *Powellia adenensis doris*. This extraordinary butterfly is only known from the area between Ksares-Souk and Tinerhir; its next nearest population flies near Cairo in Egypt, while it was originally described from Aden on the Red Sea. Presumably it represents a pocket left behind from the ancient days before the Sahara became the desert it is today. Nearer the Atlantic coast, in the Souss Valley hard under the crags of the Toubkal massif, is more extensive agriculture, and here grows a species of Milkweed, bringing with it the African and Asiatic species *Danaus chrysippus*, of which some 30% are the white-suffused form "alcippus." In the groves of Acacia (*Mimosa*) flies the African "blue" *Azanus jezous*, while *P. machaon* and the small "blue" *Zizera lysimon* are fairly common in the fields.

In the Anti-Atlas I only took *P. machaon sabaræ*, *Epinephele ida*, *Melitæa phœbe punica*, *Tarucus theophrastus*, *P. icarus*, and *Powellia ali*.

The following is a list of the species from the Atlas Mountains and the areas immediately adjoining them, including Marrakech, but omitting some species peculiar to the northern plains.

M.A. = Middle Atlas. H.A. = High Atlas. A.A. = Anti-Atlas.
N.P. = northern plains. D. = desert & desert foothills. Months of emergence are noted by numerals. c. = common, l. = local, r. = rare.

- Papilio machaon maxima* Vrtv. N.P., M.A., 5-7. l.c.
Papilio m. sabaræ Obth. A.A., D. 5. l.
P. podalirius f. "maura" Vrtv. N.P., M.A., 5-6. l.c.
P. podalirius f. "latteri" Aust. N.P., M.A., 7-8. l.c.
Zerynthia rumina africana St. M.A. 5. c.
Zerynthia r. ornator Blach. H.A. 4-5. c.
Aporia cratægi mauretanicæ Röber. M.A. 5-6. c.
Pieris brassicæ venata Vrtv. N.P., M.A., H.A., 4-7. c.
P. rapæ mauretanicæ Vrtv. N.P., M.A., 4-7. c.
P. manni baroldi Wyatt. M.A., 6-7. l.r.
P. napi blidana Holl. M.A., H.A., 5-6. l.r.
P. napi segonzaci LeCerf. H.A. 6. l.c.
Pontia daplidice nitida Vrtv. H.A., D., 4-5. c.
Euchloe eupheno L. M.A., H.A., N.P., 3-5. c.
E. charlonia Donz. H.A., N.P., D., 5. c.
E. charlonia levaillanti LeCerf. H.A., N.P., D., 3-4. c.
Anthocaris tagis mauretanicæ Röber. M.A., 5-6. l.r.
A. belemia röberi Roths. N.P., 3-4. c.
A. belemia distincta Röber. N.P., 4-5. c.
A. belia butleri Roths. N.P., M.A., H.A., 3-5. c.
A. belia turatii Roths. N.P., D., M.A., H.A., 4-6. c.
A. falloui Allard. D. 3-5. l.r.
Zegris eupheme ssp. nr. *meridionalis* Led. M.A., 5. l.c.
Gonepteryx cleopatra mauretanicæ Röber. H.A., M.A., 4-7. c.
G. rhamnii meridionalis Röber. M.A., 5-6. c.

- Teracolus दौरا nouna* Lucas. D., 6-8. c.
Teracolus d. biskrensis Blach. D., M.A., 5-6. c.
Colias croceus Four. N.P., M.A., 3-5. c.
Danaus chrysippus L. D., 4-5. l.c.
Eugonia polychloros algerica Obth. M.A., 5-7. c.
Polygonia c-album imperfecta Blach. M.A., H.A., 5-7. l.r.
Euphydryas aurinia ellisoni Rungs. M.A., 5-6. l.c.
E. desfontainei gibrati Obth. M.A., 5. c.
Melitæa phæbe punica Obth. A.A., M.A., H.A., D., 4-6. c.
M. ætherie algerica Rühl. M.A., 5-6. l.c.
M. cinxia atlantis LeCerf. M.A., 5. l.r.
M. didyma occasus Vrtvy. D., 5. c.
M. didyma mauretanica M.A., 5-7. c.
M. didyma interposita Roths. H.A., 4-7. c.
M. deserticola Obth. H.A., 4. l.r.
Issoria lathonia L. M.A., 5. c.
Argynnis lyauteyi Obth. M.A., 5-7. l.c.
A. auresiana Frhst. M.A., 5-7. l.c.
Dryas pandora seitzii Frhst. M.A., H.A., 5-7. c.
Pararge megæra vividissima Vrtvy. N.P., M.A., D., 5-6. c.
P. mœra alluandi Obth. H.A., 7. l.r.
P. mœra meade-waldoi Roths. M.A., 8. l.r.
P. ægeria L. N.P., M.A., H.A., D., 4-5. c.
Melanargia galathea meade-waldoi Obth. M.A., 5. c.
M. ines Hffmg. N.P., 5. l.c.
M. i. colossea Obth. N.P., 4-5. l.c.
M. i. jabandiezi Obth. M.A., H.A., 5-7. l.c.
M. syllius pelagia Obth. M.A., 5-6. c.
Epinephele maroccana Blach. H.A., 7. l.c.
Epinephele m. nivellei Obth. M.A., 6-7. l.c.
E. lycaon mauretanica Obth. M.A., D., 5-6. c.
E. pasiphæ philippina Aust. N.P., M.A., 4-6. c.
E. ida neapolitana Obth. N.P., M.A., H.A., 4-7. c. c.
E. jurtina fortunata Alph. N.P., M.A., 5-6. c. c.
Cœnonympha pamphilus arenosa Vrtvy. M.A., 5. c.
C. p. latevittata Vrtvy. M.A., 6-7. c.
C. vaucheri Blach. H.A., 7. l.c.
C. vaucheri annoceuri Wyatt. M.A., 5-7. l.c.
C. fettigii Obth. M.A., 6-7. l.c.
C. arcanioides Pier. M.A., 5-7. l.r.
Satyrus arethusa aksouali Wyatt. H.A., 7. l.r.
S. priouri kebira Wyatt. M.A., 7-8. r.
S. alcyone maroccana Obth. M.A., 6-8. c.
S. briseis major Obth. M.A., 6-7. c.
S. semele algerica Obth. M.A., 6-8. c.
S. atlantis Aust. H.A., 7. c.
S. atlantis colini Wyatt. M.A., 6-7. c.
S. actæa simillima Roths. M.A., H.A., 6-7. c.
S. abdelkader lambessanus Obth. M.A., H.A., 6-7. l.c.
S. abdelkader taghzefti Wyatt. M.A., 6-7. l.c.
S. fidia albovenosa Obth. M.A., (H.A.) 7. l.c.
S. fidia guildi Varin. M.A., 7. l.r.
S. statilinus rungsi Varin. M.A., 7-8. c.
S. colombati & f. "belouini" Obth. M.A., 9. l.r.
S. hansii Aust. M.A., 9. l.r.
Zephyrus quercus iberica Stgr. M.A., 7-8. c.

- Strymon esculi mauretanicus* Stgr. M.A., 6-7. c.
Callophrys rubi fervida Stgr. M.A., 5. c.
C. avis Chapman. M.A., H.A., 4-5. 1.c.
Thestor mauretanicus Lucas. M.A., H.A., 2-4. c.
T. ballus F. N.P., M.A., 3-5. c.
Chrysophanus phæbus Blach. N.P., 5-7. 1.r.
C. phlæas pseudophlæas Frhst. A.A., N.P., M.A., D., 3-5. c.
C. alcipbron herakleana Blach. H.A., 7. 1.r.
Lampides bæticus L. M.A., D., 3-4. c.
Tarucus pirthous Stmpf. N.P., M.A., 5-6. c.
T. theophrastus F. A.A., N.P., D., 5. c.
Cigaritis zobra monticola Blach. M.A., 5. 1.c.
Azanus jesous Guérin. D., N.P., 4-5. 1.c.
Zizera lysimon Hbn. N.P., D., 3-5. c.
Z. lorquinii H-Sch. M.A., 5. 1.c.
Philotes bavius fatma Obth. M.A., 5. 1.c.
P. vogelii Obth. M.A., 8. 1.r.
P. abencerragus Pier. H.A., M.A., D., 4-5. c.
Plebeius montensis Vrty. M.A., 6-7. c.
P. cramera ornata Stgr. N.P., M.A., 3-5. c.
P. c. calida Bell. M.A., 6-7. c.
Polyommatus allardi Obth. M.A., 5. r.
P. a. ungemachi Obth. H.A., M.A., 6. r.
P. martini Allard. M.A., 5-6. 1.c.
P. icarus rosina Holl. N.P., M.A., D., A.A., 5-6. c.
P. thersites Hb. ssp. M.A., 5-6. 1.c.
P. escheri ahmar Le Cerf. M.A., 6. 1.r.
P. bellargus punctifera Obth. H.A., M.A., 4-6. c.
P. amandus abdelaziz Blach. M.A., 5-6. 1.c.
Lysandra atlanticus Elwes. M.A., 6. r.
L. albicans berber Le Cerf. M.A., 7. 1.r.
Glaucopsyche semiargus maroccana Obth. M.A., 5. c.
G. melanops alluaudi Obth. H.A., M.A., 4-5, 7. c.
Lycænopsis argiolus mauretanicus Roths. M.A., 5-7. c.
Carcharodus alcææ australis Zeller. M.A., D., 5. c.
C. lavateræ rufescens Obth. M.A., 5-6. r.
C. standeri Rev. M.A., H.A., 6. c.
Hesperia sifanica numida Obth. M.A., 6. r.
H. onopordi fulvotincta Vrty. M.A., H.A., D., 4-7. c.
H. armoricanus maroccanus Pic. M.A., D., 5. c.
Sloperia proto gigas Vrty. N.P., M.A., 4-5. c.
S. mohammed Obth. M.A., 7-8. r.
S. m. f. "caid" Le Cerf. M.A., H.A., 4-5. r.
Powellia ali Obth. M.A., A.A., H.A., 4-5. c.
P. adenensis doris Riley. D., 5. 1.r.
Adopæa linea iberica Tutt. M.A., 5-6. c.
A. actæon Rott. ssp. N.P., 5. r.
A. lineola O. ssp. M.A., 5-6. r.
A. hamza Obth. M.A., 6-7. c.
Erynnis pallida benuncas Obth. H.A., M.A., 7-8½. c.
Gegenes nostradamus F. N.P., D., 4-5. 1.r.