

Atlantic Islands Yellow-legged Gulls: an identification gallery

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Of all the large gulls in the Western Palearctic, the Atlantic Islands Yellow-legged Gull *Larus michahellis atlantis* is one of the least-known. It has been scantily treated in the literature, although some information has been provided by Cramp & Simmons (1982), Grant (1986) and Garner (1997a).

The form *atlantis* was first described from the Azores (Dwight 1922), although birds supposed to be very similar also breed on the Canary Islands and Madeira. However, these latter birds, and birds breeding on the Atlantic coast of Morocco, may actually be intermediate between true *atlantis* and Mediterranean Yellow-legged Gull *L. m. michahellis* (Beaubrun 1988), or closer to the latter. Birds from Portugal and north-western Spain may also be allied to *atlantis*, but are actually closer in appearance to Herring Gull *L. argentatus argenteus* (Dubois 1986) and possibly represent another distinct form.

Although present all year on the Azores, *atlantis* is a pelagic feeder and does wander, so may be prone to vagrancy (Moore 1996), even to North America (Wilds & Czaplak 1994 and M. Gosselin *in litt.*) and Europe (see the bird photographed in Ireland in September 1994, Plate 138 in Garner 1997b).

True Azorean *atlantis* (hereafter referred to simply as *atlantis*) is quite distinct in some plumages. For example, third-years during their post-breeding moult show dense streaking on the head and look completely grey-hooded at a distance – a feature unique amongst the Western Palearctic large gulls. On the other hand, whilst still often identifiable, juveniles and first-winters are quite variable and can show a mix of characters which are very similar to nominate Yellow-legged, Lesser Black-backed *L. fuscus graellsii/intermedius*, and even some forms of Herring Gull.

This paper does not pretend to be an exhaustive treatment of the identification of *atlantis* and the other large gulls from the Macaronesian Islands. Its main aim is to present a photographic gallery of their appearance. The information presented here is based mainly on personal observations made on the Canary Islands in September 1991 and on the Azores in August 2000, with further information provided by other observers, particularly from Madeira (S. Nicolle pers. com. and Regan 1999), together with specimens from the Azores, Atlantic Morocco and Selvagem Grande (Madeira) examined at the Muséum National d'Histoire Naturelle (Paris).

Plate 1. Azorean Yellow-legged Gulls *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000, adult (centre), with one juvenile and two first-summer/second-winters (Philippe Dubois). This powerful and heavily-built adult is probably a male; it is in summer plumage, with an almost completely white head. Note that *atlantis* can appear rather short-legged.



Structure and jizz

The form *atlantis* and its close relatives from the Macaronesian Islands seem to be generally smaller, more compact, shorter-legged and shorter-winged than Mediterranean *michahellis*. Many birds also have a somewhat heavier and less 'hatched-tipped' bill than nominate *michahellis*. There is considerable sexual and individual variation, however, so structure is of little use for identifying a lone bird such as a vagrant.

Juveniles

Most of the first-years seen in August in Azores were still in full juvenile plumage and showed no sign of any post-juvenile moult. The most striking character of juveniles is the darkness of their plumage, on both the upperparts and the underparts; they are darker than most juvenile *graellsii/intermedius* and *michahellis*. Dark birds may recall some juvenile *smithsonianus*.

In the Azores, many juveniles have uniform dark chocolate upper mantle feathers creating a very dark area on the upperparts. Those from the Canary Islands at least are often paler, with this area more speckled with white, creating a more

Plate 2. Juvenile Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois).

The bases of the outer greater coverts are mainly dark brown and the underparts are strongly streaked with dark brown. Dark markings are present on the front of the tarsus.



chequered effect reminiscent of juvenile Lesser Black-backed Gull. The head colour is variable: Canarian juveniles have whiter heads with black streaking mainly around the eyes, recalling *graellsii/intermedius*, whereas Azorean and Madeiran birds often show a darker head (either uniform brownish-grey or finely streaked).

The scapulars are like those of juvenile *graellsii/intermedius* and similarly variable, although some Azorean birds have more uniformly dark brown upper scapulars with narrow white tips, recalling darker *smithsonianus* juveniles. At rest, the coverts pattern recalls the chequered appearance of either nominate *michahellis* or *graellsii/intermedius*, but without the frequent cinnamon tinge of the former. The tertials are similar to those of many nominate *michahellis*, with the tips having either fine pale fringes or pale indentations or notches.

In flight, Azorean juveniles show an obvious dark secondary bar. Many also lack a pale 'window' on the inner primaries, unlike most juvenile nominate *michahellis*, but juveniles from the Canary Islands usually do show a faint pale window. The outer and median greater coverts (and some of the inner ones) are plain, creating a dark greater covert bar. This bar is generally more obvious on Azorean birds since these normally have more inner greater coverts showing little or no pale barring.

The underwing coverts are dark, smoky brown (as in *graellsii/intermedius* and *smithsonianus*) and contrast slightly with the relatively pale brown primaries; nominate *michahellis* often shows a more gingery tone. The pattern of the tail and rump and uppertail-coverts is variable, but close to that of *graellsii/intermedius*: unlike typical *michahellis*, most juvenile *atlantis* show a broad dark tail-band, with white restricted to the outer rectrices, sometimes just as faint whitish indentations on the outer webs of the outermost tail feathers (strongly recalling juvenile *graellsii/intermedius* and *smithsonianus*). On Madeiran and Canary Islands birds, the rump and uppertail-coverts are similar to those of *graellsii/intermedius*.

All the juveniles I checked on the Azores and on the Canary Islands showed extensive dark markings on the front of the tarsi and on the feet. Juveniles and first-winters in Madeira apparently show a similar pattern (S. Nicolle, pers. com.). Nominate *michahellis* juveniles may show such dark markings less commonly, and they seem to be more quickly lost in other species such as Herring Gull and Lesser Black-backed Gull. Interestingly, this feature occurs on Kelp Gull *L. dominicanus* too (Higgins & Davies 1996). The bill is black.



Plate 3. Juvenile Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). This bird shows no sign of any post-juvenile moult. Note the uniform brown upper back. The tertials recall those typically shown by many juvenile Lesser Black-backed Gulls.



Plate 4. Juvenile Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). A paler individual with a more chequered pattern, especially on the scapulars, and on the tertials, which have white notches. As in *graellsii/intermedius* and *michahellis*, the juvenile plumage of *atlantis* is variable.

Plate 5. Juvenile Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). The upperparts are evenly chequered with quite uniform scapulars and outer wing coverts. Note the dark markings on the front of the tarsus.



Plate 6. Juvenile Canary Yellow-legged Gull *Larus michahellis*, Canary Islands, late July 1997 (Frédéric Jiguet). Compared to Azorean Yellow-legged Gull of the same age, this individual shows more chequered upperparts, bolder whitish fringes to the scapulars, and a paler head; it strongly recalls juvenile Lesser Black-backed Gull.





Plate 7. First-winter Madeiran Yellow-legged Gull *Larus michahellis*, Madeira, September 1999 (Keith Regan). This bird shows worn tertials and some second-generation scapulars, indicating that it has begun its post-juvenile moult. Note the paler head and underparts and warmer tone on the upperparts than Azorean Yellow-legged Gulls of the same age.

Plate 8. First-winter Mediterranean Yellow-legged Gull *Larus michahellis michahellis*, Calais, Pas-de-Calais, France, early September 1999 (Philippe Dubois). Compared to Atlantic Islands birds, note the whiter head, paler underparts, more chequered appearance and the presence of some new first-winter scapulars. This individual recalls Madeiran birds of the same age, but already lacks the dark markings on the tarsus. Also compare the leg length and scapular patterns.



First-winters

I have no personal experience of this plumage but, from photographs taken in winter in the Azores, it seems that juveniles have a protracted post-juvenile moult and retain much juvenile plumage through their first-winter, much like some *graellsii/intermedius* and *smithsonianus* (eg Howell *et al.* 1999 & Howell 2001) or Kelp Gull (Jiguet *et al.* 2001). Thus most of the plumage is still juvenile in winter, but the head and breast are bleached

whiter, and the scapulars may be mainly fresh, first-winter ones. First-winters collected on the Azores in February and preserved at the MNHN (Paris) are still in mostly juvenile plumage (though very worn and abraded), with a few new scapulars, however. Many first-winters on Madeira acquire wholly second generation scapulars by April (M. Ahmad, pers. com.); those on the Canary Islands seem to be similar, but show a more extensive body moult by January (B. Small, pers. com.).



Plate 9. Juvenile Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, August 2000 (Philippe Dubois). The overall rather uniform dark upperparts contrast strongly with the whitish rump and uppertail-coverts. Note the white at the base of the outer rectrices.



Plate 10. Juvenile Azorean Yellow-legged Gull *Larus michahellis atlantis*, Lajes, Pico, Azores, mid August 2000 (Philippe Dubois). The plain bases to the outer greater coverts form an extra dark bar on the wing (as on some *michahellis*). The black band on the tail is broad.



Plate 11. Juvenile Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). Note the dark underwing pattern and the dark body; such an individual might recall an American Herring Gull *L. (argentatus) smithsonianus*.

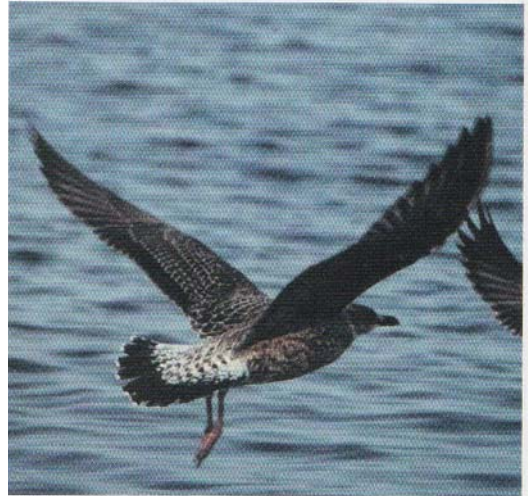


Plate 12. Juvenile Canary Yellow-legged Gull *Larus michahellis*, Canary Islands, July 1997 (Frédéric Jiguet). Note the broad tail-band, dark underwing pattern and dark body like Azorean juveniles. The greater coverts are more patterned than in Azorean birds and the extra bar is less visible.

Plate 13. Juvenile Mediterranean Yellow-legged Gull *Larus michahellis michahellis*, Les Sables d'Olonne, Vendée, France, late August 1997 (Frédéric Jiguet). Note the paler and more patterned upperwing (especially coverts), paler head, slightly more obvious pale 'window' on the inner primaries, and neat tail-band.



Plate 14. Juvenile Mediterranean Yellow-legged *Larus michahellis michahellis* (upper), Herring *L. argentatus argenteus* (middle) and Lesser Black-backed *L. fuscus* (lower) Gulls, Les Sables d'Olonne, Vendée, France, August 1997 (Frédéric Jiguet). This photograph offers the opportunity to study the tail and upperwing patterns of juveniles of the three species, and compare to the Atlantic Islands' juveniles.



First-summer/second-winters

The most important characteristic of birds in their first-summer is that many, at least in the Azores, have not finished their second partial moult (and even their post-juvenile moult?). Indeed, it is not always easy to distinguish between juveniles and first-summer birds at a glance. As mentioned by Howell (2001), they may even moult directly to 'second-winter' plumage (see Plates 15 to 18).

In the Azores, most birds in their first summer appear juvenile-like in plumage (albeit worn and faded). The scapulars, and some greater coverts and tertials, have been moulted, and these second generation feathers are dark brown, not grey. They look very dark and typically recall some first-summer *smithsonianus*. The underparts are also still very dark in many birds, although some can show a whitish breast, flanks and belly, speckled with dark streaks.

In the Canarian birds, most of the dark markings on the head and underparts wear off and they then recall nominate *michahellis* of the same age, although the demarcation between the new grey mantle feathers and the darkly marked coverts is generally less pronounced. Sometimes they have

very few new grey feathers on the mantle, and simply largely retain barred feathers on the upperparts.

In flight, the upperwing pattern is very similar to that of juveniles/first-winters, although in July–September, many birds are moulting outer primaries and secondaries. The underwing, in the majority of birds, also remains smoky grey-brown as in juveniles/first-winters (apparently in all the populations), and appears darker than in nominate *michahellis* of the same age. The tail also retains the broad black terminal bar of juveniles/first-winters, with the outermost feathers tending to be more notched with white, while the rump generally has fewer black bars. The bill remains mainly black, with some pink or yellow tones at the tip, at the base and on the culmen. Typically, dark markings are retained on the front of the legs and feet, although they may be less obvious than in the juvenile. The iris is often already pale, sometimes very pale like that of the adult; although eye colour is also advanced on Madeiran birds, many nominate *michahellis* and Canarian birds (B. Small), and *graellsii/intermedius* of the same age, still have a dark or pale brown eye.

Plate 15. First-summer/second-winter Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (*Philippe Dubois*). This bird shows second generation tertials, scapulars and coverts, as well as otherwise dark immature plumage, and is typical of Azorean birds at this age. The outer primaries are re-growing. Note the black bill, the dark markings on tarsus and feet, and the already pale eye. Canarian birds more closely resemble *michahellis* in second-winter plumage. Note that the median coverts (the first covert tract to be moulted in most large gulls) are missing (see also Plate 16).





Plate 16. First-summer/second-winter Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). This bird is slightly paler and more patterned than the bird in Plate 15. The second generation greater coverts are quite uniform, and dark markings remain on the legs, while the eye is darker and browner.



Plate 17. First-summer/second-winter Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). A paler and much more chequered individual. Note the pinkish base to the bill and the whitish eye; these features give a characteristic appearance to birds at this age.



Plate 18. First-summer/second-winter Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). Even in this plumage, the Azorean birds have an overall dark appearance in flight initially recalling some American Herring Gulls *L. (a.) smithsonianus* of the same age – although the bill pattern is different.



Plate 19. First-summer/second-winter Azorean Yellow-legged Gull *Larus michahellis atlantis*, Lajes, Pico, Azores, mid August 2000 (Philippe Dubois). In flight, *atlantis* of this age can appear more 'immature' in pattern than typical *michahellis*.

Plate 20. First-summer/second-winter Canary Yellow-legged Gull *Larus michahellis*, Canary Islands, late July 1997 (Frédéric Jiguet). Birds of the Canary Islands seem more advanced in their moult than those of the Azores. Note the finely streaked white head and the almost white underparts. The iris is also very pale.



Plate 21. First-summer/second-winter Canary Yellow-legged Gull *Larus michahellis*, Canary Islands, late July 1997 (Frédéric Jiguet). This is a more advanced bird in second-winter-type plumage, with most of its scapulars and mantle feathers grey. The almost black bill is typical of this age. Note the dark markings on the tarsi may be retained longer than in congeners.





Plate 22. Second-summer/third-winter Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). Note the tri-coloured bill and the very pale eye. The rather short legs are pale yellow and their dark markings have almost totally disappeared.

Second-summers/third-winters

Information about this age is scant and sometimes contradictory but, in fact, birds at this stage are variable. At the end of the summer, birds from both the Azores and Canary Islands at least are in an adult-like ('third winter') plumage.

The most obvious feature, at least on those from the Azores, is the dense, fine, grey head-streaking, especially around the eyes, but often on the whole head, creating a characteristic hooded effect, very obvious at a distance. No other Western Palearctic gull normally shows such a pattern, although some subadult nominate *michahellis* can show quite dense streaking (and even odd *argentatus* Herring Gulls in late autumn in southern Scandinavia, K.M. Olsen pers. com., or *graellsii* Lesser Black-backed Gull, although perhaps never as solidly on the 'fore-face').

Most birds show some dark brown or blackish immature-type feathers, mainly in the lesser and median coverts and tertials. In August, most are still moulting both the secondaries and primaries (with at least p7-8 growing and p10 sometimes still old and dark brown). From a single specimen from the Azores at the MNHN (Paris), the new p10 seems to show a white mirror, so moulted third-

winters should show a white mirror. From below, on many, the underwing still shows a broad dark bar across the rear part of remiges, recalling Lesser Black-backed Gull. The tail generally has only a few black spots at the tip, but beware of individual variations: some birds at this age can still show a broad black tail-band. From the evidence of birds in near-adult plumage, it is suggested that the complete post-breeding moult starts earlier in the season than in nominate *michahellis*, so birds seen at the end of the summer are already in 'third-winter' plumage (although still actively moulting their outer remiges).

The iris is normally already very pale, often whitish-yellow just as in the adults, and, since the head is dark, it stands out well. On the Azores birds, the bill is normally tri-coloured, unlike nominate *michahellis*: the base is generally pink with some small blackish marks, the tip is yellow or orange-yellow (also with some blackish markings) and the middle is black, forming a more or less broad subterminal band. In Canarian birds, the bill is adult-like, though also variable and with some traces of black near the gonys red spot. The legs are pale yellow, sometimes with just subtle dark markings retained on the front of the tarsi.



Plate 23. Second-summer/third-winter Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (*Philippe Dubois*). The heavy dark grey streaking on the head (especially the forehead, lores and throat) is typical and makes birds look 'hooded' at a distance. Note also the almost-adult grey plumage.

Plate 24. Second-summer/third-winter Canary Yellow-legged Gull *Larus michahellis*, Canary Islands, late July 1997 (*Frédéric Jiguet*). The plumage is quite similar to that of Azorean birds (with brown secondaries and some greater coverts), but the head is not as darkly streaked on this July bird; the bill is similar to that of Mediterranean birds (nominate *michahellis*) of the same age.





Plate 25. Second-summer/third-winter Canary Yellow-legged Gull *Larus michahellis*, Canary Islands, late July 1997 (Frédéric Jiguet). The underwing can still be very dark at this age.

Adults and near-adults

Adults and near-adults have dark grey upperparts. In full breeding plumage, they show a white mirror on p10, but, typically, no mirror on p9 (or very rarely: 2% among Azorian birds, c.10% in Madeiran birds, K.M. Olsen), unlike nominate *michahellis* (Mayaud 1940). They also often have a narrow white line between the black sub-terminal band of p5 and the grey of the feather. On the specimens checked at the MNHN (Paris), many birds have black along the primary shafts.

One of the most striking features of adults, in all the Atlantic islands, is the iris colour, which is very pale yellow or even whitish, recalling Herring Gull; Mediterranean *michahellis* rarely has such a pale eye; typically it is darker yellow (and some-

times amber). The orbital ring is red and the bill is yellow with a rather large orange-red spot on the gonys. In late summer, they are in heavy primary moult (mainly missing or growing p7-8, with p9-10 old) and covert moult, with some birds showing a whitish bar across the wing in flight due to the greater coverts being missing. I distinguished two 'adult' types in the Azores in late summer: the first with a completely, or almost completely, white head and bright yellow or orange-yellow legs (presumed adults in summer plumage), and the second with an obviously streaked head and pale yellow legs (presumably either moulting adults or possibly fourth-winter birds).

During my stay in the Azores, in August 2000, I made two interesting observations. Firstly, I saw at least two adults with definitely pale pink legs (at Lajes, Pico). At first, I thought that they might be *argenteus/argentatus*, or even *smithsonianus*, but the mantle was too dark a grey and the moulting primary pattern did not fit with these taxa, so perhaps occasional *atlantis* can have pink legs. And secondly, I saw two separate adults (again at Lajes, Pico, and at Lagoa Rasa, Flores) the same size as typical *atlantis*, but with the upperparts a shade darker grey, the wings longer, the legs and bill bright yellow, with a bright red spot on the gonys, the iris bright yellow (for two birds) and the head completely white. These birds, which appeared not to be Lesser Black-backed Gulls, stood out from the other adult *atlantis*.

Plate 26. Adult Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). This bird's primary moult has reached P5, and it has very worn tertials. It has rather heavy streaking on the face. Note the whitish iris typical of Atlantic Islands birds; Mediterranean birds generally have darker, yellower irises.





Plate 27. Adult Azorean Yellow-legged Gull *Larus michahellis atlantis*, Madalena, Pico, Azores, mid August 2000 (Philippe Dubois). This adult in 'winter' plumage has pale yellow legs and a large orange-red spot on the gonyx.



Plate 28. Near-adult Canary Yellow-legged Gull *Larus michahellis*, Canary Islands, late July 1997 (Frédéric Jiguet). The small black dot on the lower mandible may be a sign of immaturity; it may be a fourth-winter bird. Note the very pale yellowish eye.

Plate 29. Adult Mediterranean Yellow-legged Gull *Larus michahellis michahellis*, Boulogne-sur-Mer, Pas-de-Calais, France, September 1997 (Roger Tonne). Note the relatively dark yellow iris.





Plate 30. Adult Yellow-legged Gull *Larus michahellis* specimens, from left to right: 'Mediterranean', Bouches-du-Rhône, France, April 1921; 'Atlantic Moroccan', Essaouira, Morocco, April 1981; 'Madeiran', Salvage Islands, 1978; and 'Azorean', Pico, Azores, September 1930 (MNHN, Paris Philippe Dubois). The mantle colour seems to be clinal from the Mediterranean (palest) birds to the Azorean (darkest) birds. More studies are needed to assign a definite sub-specific name to the birds of Iberia and Morocco, and Madeira and the Canary Islands.

Discussion

From this first look at the identification of Atlantic Islands Yellow-legged Gulls, it appears that true *atlantis*, from the Azores, differ from the Canary Islands and Madeiran birds in a number of respects: they are darker and show some plumages – especially from juvenile to second-summer – which are quite distinct. Work is in progress to assess the relationships between the Mediterranean and Atlantic continental coast birds (J.M. Pons *et al.*, in prep.) and the birds from Atlantic islands. From a genetic point of view, no differences have yet been found in the mtDNA between nominate *michahellis* and *atlantis*, even in the Azorean birds (A. Helbig *in litt.*). However, using other genetic markers, Crochet (1998) and Pons *et al.* (in progress) have found some differences between 'Atlantic' Yellow-legged Gulls from the continent and *michahellis* from the Mediterranean basin. Thus, more genetic studies are needed to clarify the genetic affinities among the continental and insular forms. But the differences in plumage, and apparently in the moult sequences, seem to be important between nominate *michahellis* and *atlantis*, especially with Azorean birds. Finally, birds on the Azores lay their eggs mainly in late April (Le Grand 1984 & 1993), a little later than *michahellis* from the Atlantic continental coast.

It is possible that the phenotypic and biological differences between nominate *michahellis* and at least the Azorean birds are the result of rapid reproductive isolation and that classic lineage markers, such as the cytochrome b gene, would not display significant genetic differentiation (see Crochet 1998).

From the identification point of view, the

Atlantic Islands – and especially the Azorean – Yellow-legged Gulls are distinct from nominate *michahellis* in most plumages, so their taxonomic separation seems reliable. Further studies are necessary to better understand the links between 'Atlantic' *michahellis* (from north-western Spain to Morocco) and the Yellow-legged Gulls on Madeira and the Canary Islands, although the last more closely resemble typical *michahellis* and birds from Morocco than *atlantis*. The potential identification pitfall posed by adult Herring × Lesser Black-backed Gull hybrids has not been addressed here.

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