

BREEDING OF THE MEDITERRANEAN GULL *LARUS MELANOCEPHALUS*  
IN SLOVENIA

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## ABSTRACT

*Breeding of the Mediterranean Gull Larus melanocephalus has been confirmed for the first time in Slovenia. In a mixed Black-headed Gull Larus ridibundus (160 breeding pairs) and Common Tern Sterna hirundo colony (45 breeding pairs), a nest of Mediterranean Gull with four warm eggs was found on 23<sup>rd</sup> May 2006. Breeding was successful – an adult Mediterranean Gull was observed feeding its young close to the colony on 1<sup>st</sup> July 2006. Breeding in Slovenia was expected, as the species' breeding range is in expansion. From 1984 until the first breeding, it was recorded 17 times during the breeding period in NE Slovenia. An adult Mediterranean Gull was observed for the first time in a colony in 1997, but until 2001 no breeding attempts were observed. Breeding attempts in the colony were recorded in 2001 and 2005. The mixed colony on Lake Ptuj (SE Slovenia, Drava River) is located on two artificial islets (830 and 200 m<sup>2</sup> surface area) and two concrete power-line pedestals. The islets are overgrown with herbal vegetation. Based on observations of adults and colony visits, two pairs of Mediterranean Gull were breeding in the colony in 2007, one pair in 2008, and at least one pair in 2009. After breeding in four successive years, we treat the Mediterranean Gull as a regular breeder in Slovenia.*

**Key words:** Mediterranean Gull, *Larus melanocephalus*, breeding, colonization, Slovenia

RIPRODUZIONE DEL GABBIANO CORALLINO *LARUS MELANOCEPHALUS*  
IN SLOVENIA

## SINTESI

*La riproduzione del gabbiano corallino Larus melanocephalus è stata confermata per la prima volta in Slovenia. In una colonia mista di gabbiano comune Larus ridibundus (160 coppie nidificanti) e sterna comune Sterna hirundo (45 coppie nidificanti), il 23 maggio 2006 è stato trovato un nido di gabbiano corallino con quattro uova calde. L'accoppiamento ha avuto successo ed un adulto di gabbiano corallino è stato osservato mentre nutriva la prole, in prossimità della colonia, il 1° luglio 2006. La riproduzione di tale specie in Slovenia era un fatto da aspettarsi, in quanto il range riproduttivo della specie è in espansione. Dal 1984 fino al 2006 la specie è stata segnalata 17 volte durante il periodo riproduttivo nel NE della Slovenia. Un adulto di gabbiano corallino è stato osservato per la prima volta in una colonia nel 1997, ma fino al 2001 non sono stati registrati tentativi di riproduzione (segnalati poi nelle colonie fra il 2001 ed il 2005). La colonia mista del lago di Ptuj (Slovenia SE, fiume Drava) è situata su due isole artificiali (830 e 200 m<sup>2</sup> di superficie) e due piedestalli di calcestruzzo. Due coppie di gabbiano corallino sono state avvistate mentre nidificavano nella colonia nel 2007, una coppia nel 2008, ed almeno una coppia nel 2009. Dopo quattro anni successivi di tali avvistamenti, gli autori considerano il gabbiano corallino quale specie regolarmente nidificante in Slovenia.*

**Parole chiave:** gabbiano corallino, *Larus melanocephalus*, riproduzione, colonizzazione, Slovenia

## INTRODUCTION

The greater part of the Mediterranean Gull *Larus melanocephalus* breeding range is confined to the western Palearctic. In the 1940s and 1950s, it bred almost exclusively in south-western Europe, on the shores of Black and Azov Sea. In the 1950s and 1960s, it began spreading its breeding range into Middle and Western Europe, where it nowadays breeds in most of the countries. The largest populations in that part of Europe are in France (2300 pairs), Italy (up to 3000 pairs), Belgium (1450 pairs) and in the Netherlands (850 pairs). All of them increased after 1990 (Bekhuis *et al.*, 1997; Glutz von Blotzheim & Bauer, 1999; BirdLife International, 2004; Brichetti & Fracasso, 2006).

Due to breeding range expansion, enlargement of disjunct populations and long-term stable central population in Ukrainian part of the Black Sea, counting up to 300,000 pairs, the Mediterranean Gull has been recently evaluated as an expanding species (BirdLife International, 2004).

The Mediterranean Gulls select small islands with short vegetation as breeding sites. In Middle and Western Europe, they usually form mixed colonies with Black-headed Gulls *L. ridibundus* (Glutz von Blotzheim & Bauer, 1999). Such colonies can be found in countries bordering Slovenia, too – Neusiedler See in Austria (Laber, 2000) and Kis Balaton in Hungary (Varga *et al.*, 1996). In Italy, it breeds in larger-sized Adriatic coastal wetlands and saltpans where it forms dense mixed colonies with Black-headed and Yellow-legged Gulls *L. michahellis* and Common *Sterna hirundo* and Little Terns

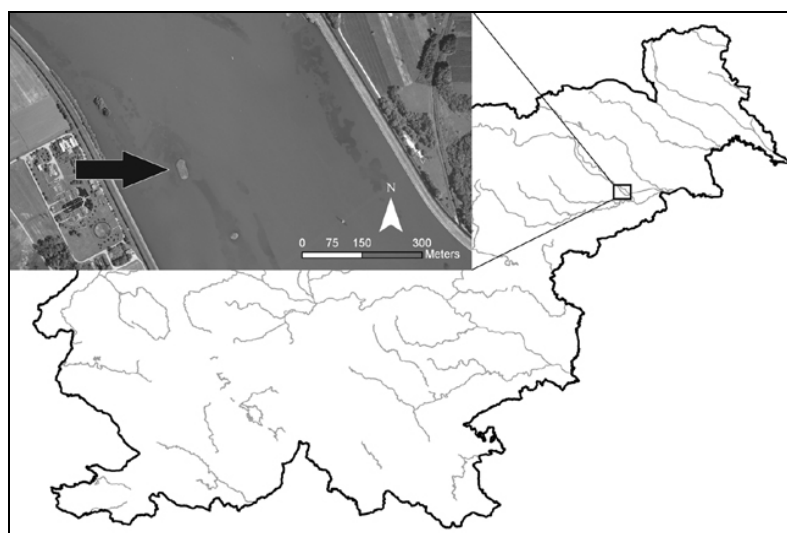
*Sternula albifrons* (Brichetti & Fracasso, 2006). So far, breeding has not been confirmed in Croatia (Kralj, 1997; Radović *et al.*, 2005). Continental populations of the Mediterranean Gull are smaller than those in coastal areas and rarely exceed several pairs (Bauer *et al.*, 2005).

In Slovenia, the species is regularly recorded on the coast during migration and the wintering period, and its numbers fluctuate from low during spring migration to the Eastern European breeding sites to high in late summer and autumn. An estimated 0.5–5.0% of the world population migrates over the Slovenian coast in late summer and autumn (Rubinič, 1995). Mediterranean Gull is a rare migratory species in the continental part of Slovenia – there are only two records from well-surveyed wetland sites in central Slovenia, one from Cerknica Lake (Kmecl & Rižner, 1993) and one from Ljubljansko barje (Tome *et al.*, 2005). The exceptions are few sites in the Drava river floodplain area. During the last two decades, Mediterranean Gull was most regularly observed on Lake Ptuj (own data).

The aim of this work is to give an overview of the past occurrence of Mediterranean Gull in the breeding season in continental Slovenia indicating species' colonisation, and to present data on its confirmed breeding.

## MATERIAL AND METHODS

The study was conducted at Lake Ptuj on the Drava River in NE Slovenia. This is a large water reservoir for the channel-type power plant Formin that started operating in 1978. Surface of the lake is 4.2 km<sup>2</sup>; the embankments of the lake are artificial (Šmon, 2000). The area



**Fig. 1:** Map of Slovenia with marked Lake Ptuj reservoir. Black arrow indicates the islet where Mediterranean Gull *Larus melanocephalus* was breeding. (Map source: DOF5, GURS)

**Sl. 1:** Zemljevid Slovenije z označenim Ptujskim jezerom. Črna puščica kaže otok, kjer je gnezdil črnoglabi galeb *Larus melanocephalus*. (Vir: DOF5, GURS)



**Fig. 2: Breeding habitat of the Mediterranean Gull *Larus melanocephalus* at Lake Ptuj, 23<sup>rd</sup> May 2006. (Photo: D. Denac)**

**Sl. 2: Gnezditveni habitat črnoglavega galeba *Larus melanocephalus* na Ptujskem jezeru, 23. 5. 2006. (Foto: D. Denac)**

(46°24'27" N, 15°53'05" E) is situated in the subpannonical zoogeographic region of Slovenia (Mršič, 1997) and is part of the Special Protected Area (SPA) SI5000011 Drava (Uradni list RS, 2004). This SPA is particularly significant as a wintering site for waterbirds at the national and international levels. It holds nationally important breeding populations of the Kingfisher *Alcedo atthis* and Common Tern (Štumberger, 2000; Božič, 2003).

There are three artificial islets on the lake (Fig. 1). Surface of the first islet is 790 m<sup>2</sup>, 200 m<sup>2</sup> of the second, and 830 m<sup>2</sup> of the third. Their distances from the bank of the lake are 50, 200 and 155 m, respectively. The first two islets were made of gravel and created before the lake was filled with water. The third was created in winter 2004/05 using lake sediments (Fig. 2). The first islet is currently overgrown by trees, whereas the vegetation of the other two is regularly mown by members of DOPPS-BirdLife Slovenia, thus maintaining the clear breeding site of the gull and tern colony.

Common Terns and Black-headed Gulls breed on mown islets and on two concrete power-line pedestals (Geister, 1995; Bračko, 1999; Denac, 2004). During the regular annual monitoring of the breeding colony in 2006, 2007 and 2009, the largest (third) islet was visited and the number of nests and clutch sizes counted. Clutches were determined using an identification key (Harrison, 1975). Recommendations for minimal disturbance of breeding birds were followed during our visit (Wagener, 1998). Due to the very lush vegetation in 2007, and to avoid any potential damage on clutches and

chicks, it was not possible to thoroughly check the colony ground and count all the nests during the colony visit. In 2008, the monitoring was conducted by counting breeding birds with telescope from the lake embankment.

For an overview of past occurrence of the Mediterranean Gull in the breeding season in continental Slovenia, published and unpublished data were included, but not the observations of the breeding Mediterranean Gulls in the colony.

## RESULTS

Twenty nine (29) breeding season records are known for the NE part of Slovenia from 1984 onwards, with 17 of them made before the first confirmed breeding in 2006. In 1997, a Mediterranean Gull in its second-summer plumage was observed for the first time on Lake Ptuj in a colony of Black-headed Gulls, but no breeding activities were recorded (Tab. 1). The first territorial Mediterranean Gull was observed in a colony of Black-headed Gulls on Lake Ptuj in 2001. It was defending its territory and chasing away Black-headed Gulls (Smole, 2001). Similar behaviour was observed in the same colony in 2005, when an adult Mediterranean Gull courted a Black-headed Gull (Denac & Smole, 2005) and presumably bred in a mixed pair. The majority of birds recorded at Medvedce reservoir in the 2005-2008 period and a bird recorded in 2007 at Kungota pri Ptuj were presumably breeding individuals from Lake Ptuj (Bordjan & Božič, *submitted*).

**Tab. 1: Occurrence of Mediterranean Gull *Larus melanocephalus* during the breeding season in continental Slovenia (author's data where source is empty). Legend: Ad – adult individual, 1<sup>st</sup>W – first-winter individual, 1<sup>st</sup>S – first-summer individual, 2<sup>nd</sup>S – second-summer individual.**

**Tab. 1: Pojavljanje črnohlavega galeba *Larus melanocephalus* v gnezditvenem obdobju v kontinentalni Sloveniji (kjer je pri viru prazno, so lastni podatki avtorjev). Legenda: Ad – odrasel osebek, 1<sup>st</sup>W – prvozimski osebek, 1<sup>st</sup>S – prvopoleten osebek, 2<sup>nd</sup>S – drugopoleten osebek.**

Year	Place	No. individuals	Age	Status	Source	Observation dates
1984	Ledavsko lake	7	Ad	No breeding activity	Geister, 1984	09/07/84
1990	Hotinja vas	4	Ad	No breeding activity	Vogrin, 1990	11/04/90
1991	Ormož lake	1	1 <sup>st</sup> W	No breeding activity		31/03/91
1994	Lake Ptuj	1	Ad	No breeding activity		08/04/94
1994	Turniški travniki (Lake Ptuj)	3	1 Ad, 2 2 <sup>nd</sup> S	No breeding activity		19/04/94
1997	Lake Ptuj	1	2 <sup>nd</sup> S	No breeding activity, present in a mixed Black-headed Gull and Common Tern colony		01/05/97 – 17/05/97
1997	Ormož lake, TSO waste water basins	2	2 <sup>nd</sup> S	No breeding activity		05/05/97
2001	Medvedce reservoir	2	1 Ad, 1 2 <sup>nd</sup> S	No breeding activity	Kerček, 2005	10/05/01
2001	Lake Ptuj	1	Ad	Territorial in a mixed Black-headed Gull and Common Tern colony	Smole, 2001	28/05/01 – 24/06/01
2003	Medvedce reservoir	1	Ad	No breeding activity	Kerček, 2005	04/04/03
2003	Medvedce reservoir	1	2 <sup>nd</sup> S	No breeding activity	Kerček, 2005	26/06/03
2003	Medvedce reservoir	1	Unknown	No breeding activity	Kerček, 2005	29/06/03
2003	Medvedce reservoir	1	Unknown	No breeding activity	Kerček, 2005	10/07/03
2003	Medvedce reservoir	1	Ad	No breeding activity	D. Bordjan, <i>in lit.</i>	25/07/03
2004	Medvedce reservoir	1	2 <sup>nd</sup> S	No breeding activity	Kerček, 2005	23/04/04
2005	Lake Ptuj	1	Ad	Breeding in a mixed pair with Black-headed Gull in the colony	Denac & Smole, 2005	14/05/01 – 29/05/05
2005	Medvedce reservoir	1	Ad	No breeding activity	Bordjan & Božič, <i>submitted</i>	25/07/05
2006	Medvedce reservoir	4	Ad	No breeding activity	Bordjan & Božič, <i>submitted</i>	19/06/06
2006	Medvedce reservoir	4	Ad	No breeding activity	Bordjan & Božič, <i>submitted</i>	06/07/06
2006	Medvedce reservoir	1	Ad	No breeding activity	Bordjan & Božič, <i>submitted</i>	12/07/06
2007	Medvedce reservoir	1	Ad	No breeding activity	Bordjan & Božič, <i>submitted</i>	18/03/07
2007	Kungota pri Ptuj	1	Ad	No breeding activity	M. Kerček, <i>in lit.</i>	02/06/07
2007	Medvedce reservoir	1	Ad	No breeding activity	Bordjan & Božič, <i>submitted</i>	06/06/07
2008	Medvedce reservoir	2	Ad	No breeding activity		24/06/08
2008	Medvedce reservoir	3	Ad	No breeding activity	D. Bordjan, <i>in lit.</i>	05/07/08
2008	Medvedce reservoir	1	1 <sup>st</sup> S	No breeding activity	D. Bordjan, <i>in lit.</i>	06/07/08
2008	Medvedce reservoir	4	2 Ad, 2 1 <sup>st</sup> S	No breeding activity	D. Bordjan, <i>in lit.</i>	12/07/08
2009	Ormož lake	1	Ad	No breeding activity	D. Bordjan, <i>in lit.</i>	15/03/09
2009	Ormož lake	2	Ad	No breeding activity		27/04/09 – 04/05/09

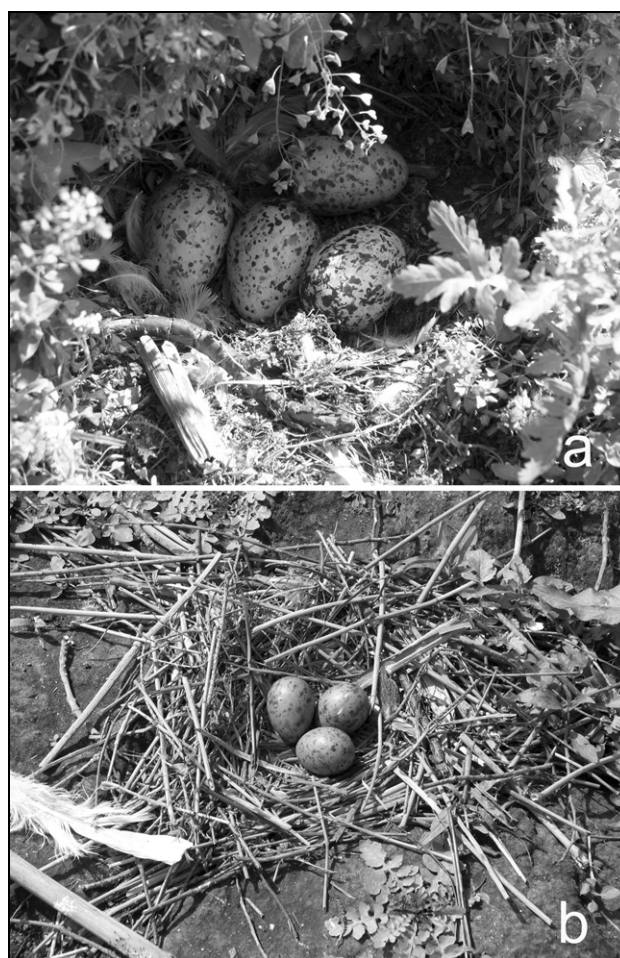
**Tab. 2: Numbers of breeding Mediterranean Gulls *Larus melanocephalus* on Lake Ptuj in a mixed-species colony. Author's data supplemented with B. Štumberger (in lit.). Legend: \* number of breeding pairs based on observations.**  
**Tab. 2: Števila gnezdečih črnoglavih galebov *Larus melanocephalus* na Ptujskem jezeru v mešani koloniji. Podatki avtorjev dopolnjeni z B. Štumberger (in lit.). Legenda: \* število gnezdečih parov na osnovi opazovanj.**

Year	Place	No. breeding pairs (clutch size)	Description
2006	Lake Ptuj	1 (4)	Nest found (23/05/09) and fledged young observed (01/06/09)
2007	Lake Ptuj	2*	2 adults and 2 subadults flying above the colony (24/05/07 – 01/06/07), 11 juveniles on the lake (31/08/08 – 20/09/07)
2008	Lake Ptuj	1*	1 adult observed flying and foraging close to the colony (24/05/08)
2009	Lake Ptuj	1 (3) – 2*	Nest found (22/04/09) and several observations of up to 3 adults (23/03/09 – 09/05/09; the last observation included in the article)

Breeding of the Mediterranean Gull was for the first time confirmed at Lake Ptuj in the colony on the third islet in 2006. The mixed-species colony held 160 pairs of Black-headed Gull, 45 pairs of Common Tern and one (1) pair of Mediterranean Gull. The Mediterranean Gull clutch was identified when compared with numerous clutches of the Black-headed Gull. Mediterranean Gull eggs were considerably bigger and with distinctive pale ground coloration (Fig. 3). On the basis of the observations we infer that breeding took place in 2007 and 2008 as well. In 2009, breeding was confirmed again when a single Mediterranean Gull clutch was identified amidst 353 nests of Black-headed Gulls. Further observations in 2009 indicate the possibility of two breeding pairs (Tab. 2).

## DISCUSSION

In view of the recent range expansion, numerous observations in the past, at least one breeding attempt and suitable breeding places in the existing colonies of Black-headed Gulls and Common Terns, breeding of the Mediterranean Gull in Slovenia was expected. Compared with the majority of other countries in Central and Western Europe, the first confirmed breeding in Slovenia is rather late, *i.e.* some 30 years later than in neighbouring Austria and Italy (Laber, 2000; Brichetti & Fracasso, 2006). Partly, this can be a consequence of few Black-headed Gull colonies breeding regularly in Slovenia and a limited number of potentially suitable breeding sites. The pattern of colonization was similar as observed in many other European countries: individual breeding attempts and breeding of mixed pairs with Black-headed Gull were followed by confirmed breeding. Breeding was usually fairly irregular in the first years and often it took several years or even decades before colonization and larger colonies were established (Boschert, 1999; Chytil, 1999; Meininger & Flamant, 1999; Chytil & Macháček, 2000; Zielińska *et al.*, 2007). Breeding in a mixed pair with Black-headed or Common



**Fig. 3: Clutch of the Mediterranean Gull *Larus melanocephalus* (a), found on Lake Ptuj islet, 23<sup>rd</sup> May 2006, in comparison with (b) clutch of the Black-headed Gull *Larus ridibundus*. (Photo: D. Denac)**

**Sl. 3: Leglo črnoglavega galeba *Larus melanocephalus* (a) na otoku na Ptujskem jezeru, 23. 5. 2006, v primerjavi z (b) leglom rečnega galeba *Larus ridibundus*. (Foto: D. Denac)**

Gull *L. canus* is otherwise known for this species (Deutsch & Buchheim, 1999; Glutz von Blotzheim & Bauer, 1999). After breeding for four successive years, we treat the Mediterranean Gull as a regular breeder. According to the data from other countries, regular breeding for several consecutive years occurred at only small part of breeding sites (e.g. Boschert, 1999). Monitoring of further development of the Mediterranean Gull breeding population at Lake Ptuj, particularly its size, remains a challenge. Although the majority of Mediterranean Gulls in continental areas breed in mixed-species colonies with Black-headed Gulls, the presence of the latter in high densities, as is the case on the islets at Lake Ptuj, could reduce the possibility of Mediterranean Gull population increase. Breeding season of the Black-headed Gull commences approximately one month earlier as that of the Mediterranean Gull (Bauer *et al.*, 2005) and the former can occupy the majority of suitable breeding places, as it was recorded in Vojvodina, Serbia (Gergelj *et al.*, 2004). A nest containing four eggs found in 2006 is quite unusual regarding the normal clutch size of 2-3 eggs. In Germany, only 5% of clutches con-

tained four eggs. Presumably, such clutches originate from several females laying into a single nest (Bauer *et al.*, 2005).

The Mediterranean Gull is listed in Annex 1 of the Council Directive 79/409/EEC on the conservation of wild birds. Therefore, breeding records are important regarding conservation, too. For the time being, the Mediterranean Gull is not listed among species for which Special Protection Area (SPA) SI5000011 Drava (Uradni list RS, 2004) was designated. If numbers of the regularly breeding Mediterranean Gull eventually increase to at least five pairs, it will be necessary to review the existing official documents and list the Mediterranean Gull as a qualifying species of the SPA Drava in the scope of Natura 2000 network in Slovenia.

#### ACKNOWLEDGMENTS

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## GNEZDENJE ČRNOGLAVEGA GALEBA *LARUS MELANOCEPHALUS* V SLOVENIJI

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#### POVZETEK

Leta 2006 smo v Sloveniji prvič potrdili gnezditvev črnohlavega galeba *Larus melanocephalus*. Gnezdo s štirimi jajci je bilo najdeno 23. 5. 2006 v mešani koloniji rečnih galebov *Larus ridibundus* (160 gnezdečih parov) in navadnih čiger *Sterna hirundo* (45 gnezdečih parov) na otoku sredi Ptujkega jezera. Gnezditvev je bila uspešna – v neposredni bližini kolonije smo 1. 7. 2006 opazovali speljanega mladiča, ki ga je hranil odrasel črnohlavi galeb. Gnezditvev je bila pričakovana, saj je črnohlavi galeb vrsta v ekspanziji. V severovzhodni Sloveniji je bil črnohlavi galeb v gnezditvenem obdobju od leta 1984 do prve potrjene gnezditve opazovan 17-krat. V mešani koloniji na Ptujskem jezeru je bil prvič opazovan leta 1997, vendar do leta 2001 nismo registrirali poskusa gnezditve. Poskus gnezditve smo zabeležili leta 2001 in 2005. Mešana kolonija na Ptujskem jezeru gnezdi na dveh umetnih otokih (površine 830 in 200 m<sup>2</sup>) in na dveh betonskih daljnovodnih podstavkih. Otočka prerašča zeliščna vegetacija. Na podlagi opazovanj in obiskov kolonij zaključujemo, da sta na Ptujskem jezeru leta 2007 gnezdila dva para, leta 2008 en par in leta 2009 najmanj en par črnohlavega galeba. To vrsto galeba zato prištevamo med redne gnezditke v Sloveniji.

**Ključne besede:** črnohlavi galeb, *Larus melanocephalus*, gnezdenje, kolonizacija, Slovenija

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