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ISTOČNI JADRAN U DJELU  
BEAUTEMPS-BEAUPRÉA

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EASTERN ADRIATIC IN THE WORK  
OF BEAUTEMPS-BEAUPRÉ

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## PREDGOVOR

One, 2006. godine, navršavaju se dva stoljeća od početka sustavnih znanstveno utemeljenih hidrografske, oceanografske, geomagnetske i drugih marinskih multidisciplinarnih istraživanja istočnog Jadrana. Njih je 1806. i 1808.-1809. godine realizirao znameniti francuski hidrograf Charles Fran ois Beaum ps-Beaup re jer je taj akvatorij tada bio pod francuskom upravom.

Rezultati njegova rada bit  e temelj svih kasnijih hidrografske i drugih marinskih istra iva ja isto nog Jadrana, pa i Jadranskog mora u cjelini. Istodobno, i jedan od temelja koji  e inicirati pojavu prvih hidrografske i kartografske institucije nove organizacije i nemjerljivo vi e kvalitete. Ponajprije to je Vojnogeografski institut austrijskog Carsko-kraljevskog vrhovnog sto era (*Istituto Geografico Militare dell'I. R. Stato Maggiore austriaco*), nastao po restauraciji austrijske vlasti 1815. godine, i sam ba tinik Napoleonova Topografskog biroa (*Bureau Topographique*), uspostavljenog nakon francuskog zaposjedanja sjeveroistoka Italije 1796. godine, koji  e 1803. prerasti u Ratni depo (*D p t de la guerre*) u Milansu. Uspostava tog Instituta bila bi nezamisliva i bez znanstvenih rezultata o Jadrani Beaum ps-Beaup re. Podjednako tako, restauracijom austrijske vlasti, u Veneciji, ve  1814. godine, uz onodobni Mornari ki koled  (Marine-Collegium; ranije: *Collegio di Marina*), inicirat  e se stvaranje Mornari ke knji nice (Marine-bibliothek), u sklopu koje  e, za potrebe tog Koled a, ali i nejake austrijske ratne mornarice toga doba, biti prikupljeni i  uvani planovi, plovidbene karte, priru nici za plovidbu i raznolika druga djela bitna za navigaciju. Odatle  e krenuti inicijativa da 1816. po ne sustavna hidrografska izmjera cjeline Jadranskog mora u organizaciji Austrije, sto  e potrajati nekoliko godina. Iz toga  e rezultirati dva monumentalna djela: *Carta di cabottaggio del mare Adriatico*, 1824. i *Portolano del Mare Adriatico*, redaktor G. Marieni, 1830., oba u izdanju milanskog Vojnogeografskog instituta.

Slo ene geopoliti ke relacije tih desetlje a u Europi, pa i na Sredozemlju, austrijske  e vlasti nagnati da milanski Vojnogeografski institut 1839. premjeste u Be  gdje  e dalje djelovati pod novim imenom: Carsko-kraljevski Vojnogeografski institut (prvo: *I. R. Istituto Geografico Militare*, a zatim: *K. u. K. Milit r Geographisches Institut*). Upravo ta  injenica rezultira, sto nije nimalo slu ajno, da se drugo tek pone to popravljeno izdanje plovidbenog priru nika, *Portolano del Mare Adriatico*, redaktora G. Marienija, priredi i tiska u Be u, 1845. godine. Ne to kasnije, 1848.-1850., spomenuti Koled  i Mornari ka knji nica, pred talijanskim ratom za ujedinjene, bivaju preseljeni u Trst, pa se nekada ni Koled  ve  1851. preimenuje u Mornari ku akademiju (Marine-Akademie), kao odgojno-obrazovnom kvalitetom bitno respektabilniju instituciju. U narednih desetak godina, usporedo s razvitkom te Akademije, austrijski mornari ki krugovi uvidaju da se i hidrografska djelatnost mora po eti sustavnije razvijati, da bi uop e mogla odgovoriti potrebama njihove mornarice koja se i sama ubrzano po ela izgra ivati - primjerice 1856. pola e se kamen temeljac za izgradnju arsenala u Puli, sto  e, prema ideji viceadmirala Hansa Birchera Dahlerupa (1790.-1872.), od Pule s vremenom doista stvoriti glavnu ratnu luku Monarhije.

Na tragu tih nastojanja osniva se tr canski Hidrografska zavod (*Hydrographische Anstalt*) 1860., a zatim i njegovo izdvojeno Spremi te (*Filial-Depot*) u Puli 1863., da bi se 1866. ukinuo tr canski Hidrografska zavod njegovim preseljenjem u Pulu. Taj pulski Zavod, u međuvremenu preimenovan u Hidrografska ured Carsko-kraljevske ratne mornarice (*Hydrographische Amte k. und k. Kriegs-Marine*), do 1918. godine afirmirat  e se u jednu od najrespektabilnijih znanstveno utemeljenih hidrografske ustanova Europe i svijeta. Dakako, cijelo je vrijeme svojeg postojanja

## PREFACE

This, 2006 year, two centuries have passed since the beginnings of systematic scientific hydrographic, oceanographic, geomagnetic and other marine multidisciplinary investigations in Eastern Adriatic. They were carried out in 1806 and 1808-1809 by Charles Beaum ps-Beaup re, a renowned French hydrographer, since at that time the Eastern Adriatic waters were under French rule.

The results of his work laid the groundwork for all later hydrographic and related marine investigations in Eastern Adriatic and the Adriatic Sea as a whole. At the same time, they provided foundations for the first hydrographic and cartographic institutions distinguished by a new structure and higher quality. One of them was the Military Geographic Institute of Austrian Imperial and Royal Supreme Command (*Istituto Geografico Militare dell'I. R. Stato Maggiore austriaco*) in Milan, founded in 1815 after the restoration of Austrian rule. The Institute itself was heir to Napoleon's Topographic Bureau (*Bureau Topographique*) established after the French occupation of the northeast of Italy in 1796. In 1803 it developed into the War Depot (*D p t de la guerre*) in Milan. Establishment of this Institute would have been hard to imagine without Beaum ps-Beaup re's scientific results on the Adriatic. In 1814, after the restoration of Austrian power, they initiated the formation of Marine Library (Marine-bibliothek) within the Marine College in Venice (Marine-Collegium; formerly *Collegio di Marina*). The library was intended for the needs of the College and of the weak Austrian Navy of that period, as central place for collecting navigational charts, nautical books and other publications essential to navigation. From there started the initiative for a systematic hydrographic survey of the entire Adriatic Sea in 1816, organised by Austria, which lasted for several years. The survey yielded two grandiose works: *Carta di cabottaggio del mare Adriatico* (1824), and *Portolano del Mare Adriatico* edited by G. Marieni (1830), both published by the Military Geographic Institute in Milan.

Complex geopolitical relations in Europe as in the Mediterranean were the reason why in 1839 Austrian authorities moved the Military Geographic Institute to Vienna where it continued its activities under the name of Imperial and Royal Military Geographic Institute (first: *I. R. Istituto Geografico Militare*; later: *K.u.K. Milit r Geographisches Institut*). Owing to this very fact, by no coincidence, the second edition of navigational handbook *Portolano del Mare Adriatico* by G. Marieni was edited and printed in Vienna in 1845. Several years later, between 1848 and 1850, before the Italian war for unification, the College and Marine Library were moved to Trieste. In 1851 the former College was renamed the Marine Academy (Marine-Akademie), a notably more respectable institution in educational terms. In the next some ten years, with the growth of the Academy, Austrian marine circles recognised the need for a systematic development of the hydrographic activity, so as to meet the needs of their fast growing navy. In 1856 they laid foundation stone for the construction of arsenal in Pula, which gradually, following the idea of vice-admiral Hans Birch Dahlerup (1790-1872), rendered Pula the major naval port of the Monarchy.

In 1860, in the wake of these efforts, Hydrographic Office was founded in Trieste (*Hydrographische Anstalt*), and in 1863 its subsidiary Depot (*Filial-Depot*) in Pula. In 1866 the Hydrographic office in Trieste was dissolved and moved to Pula. Until 1918, the Office in Pula which in the meantime was renamed the Hydrographic Office of Imperial and Royal Navy (*Hydrographische Amte k. und k. Kriegs-Marine*), achieved recognition as one of the most respectable scientific hydrographic institutions in Europe and worldwide. Throughout its exis-

usko surađivao s bečkim Carsko-kraljevskim Vojnogeografskim institutom, primjerice oko pripreme i tiska svih karata i drugih publikacija. Time se nastavila ranija praksa, vezana uz milansko razdoblje tog instituta (1815.-1839. godine).

Dakako, dok se to događalo na istočnom Jadraru, rezultati Beautemps-Beaupréa iz njegovih kampanja s početka tog 19. stoljeća, bit će objavljeni. Prvo će se to učiniti u Francuskoj: priređenje i tisk serije crno-bijelih plovidbenih karata istočnog Jadrana 1820.-1821. godine. Slijedit će integralno "Izvješće" 1849. u francuskom Hidrografskom godišnjaku (*Annales hydrographiques*). Ubrzo zatim, Alexandre le Gras, u nakladi francuskog Generalnog spremišta ratne mornarice (*Dépôt général de la Marine*), tiskat će svoj plovidbeni priručnik Jadrana, *Manuel de la navigation dans la mer Adriatique, d'après Marieni, Beautemps-Beaupré, etc., et les documents les plus récents*, Paris, 1855. Već u naslovu tog priručnika skromno je istaknuto da je napisan na temelju onog što je učinio Marieni. Taj je pak mogao prirediti svoj Portolano 1830. i njegovo dopunjeno izdanje 1845. godine, s obzirom na to da je imao i rezultate ranije obavljena Beautemps-Beaupréova istraživanja, u kopiji pohranjenoj i u milanskom Vojnogeografskom institutu. K tome, izrijekom se navelo i samog Beautemps-Beaupréa misleći na njegovo objelodanjeni "Izvješće", ali i tiskane plovidbene karte.

Najzanimljivije u svemu tome je činjenica da je određeni dio Beautemps-Beaupréova "Izvješća" visokostručna geostrateška analiza luka, kanala, zaljeva i sidrišta istočnog Jadrana, s obzirom na onodobnu nakanu francuske ratne mornarice da ovdje, ako bi francuska vlast duže potrajala, izgradi sustav vojnopolomskih baza i drugih mornaričkih instalacija. To se "Izvješće" tiska, kako je spomenuto, 1849. godine, da bi već 1850.-1860. u Boki kotorskoj ondašnji austrijski general Lazar Mamula počeo sustavno pretvaranje tog zaljeva u isturenu austrijsku vojnopolomsku bazu, ali se 1853. donosi odluka u austrijskom Vrhovnom stožeru da će Pula biti glavna ratna luka carevine. Ako se ima u vidu sve ono što je Beautemps-Beaupré predlagao Napoleonu u svojem "Izvješću", dostupnom i najvišim austrijskim časnicima od 1849. godine, onda takav slijed nipošto nije slučajan.

K tome, treba imati u vidu i činjenicu da će temeljem svih tih rezultata pulski Hidrografski ured, i sam nakon više hidrografskih istraživačkih kampanja, te na njihovu temelju priređenih i tiskanih brojnih plovidbenih karata različitih mjerila, pod kraj 19. stoljeća, tiskati prvo, *Segelhandbuch für das Adriatische Meer*, 1893., a zatim i drugo izdanje svojeg plovidbenog priručnika za Jadran: *Segelhandbuch der Adria*, 1906. godine. Tako će još tada, utjecaj Beautemps-Beaupréa na hidrografiju i kartografiju Jadranskog mora postati presudan.

Sukladno ranijim geopolitičkim mijenjama zbog kojih je došlo do seljenja Hidrografskog zavoda iz Trsta u Pulu, slično će biti i tijekom 20. stoljeća. Budući da Pula 1918. dolazi pod talijansku vlast, dio stručnog osoblja i ono malo opreme, karata i drugog što će se uspjeti spasiti, uz priku-pljenu istu takvu gradu duž istočnog Jadrana, bit će okosnicom stvaranja novog Hidrografskog ureda u Tivtu 1922. godine, istinskog sljednika onog pulskog. Već 1923. bit će preseljen u Dubrovnik, jer se tamo otvorila Pomorska akademija. Odatle prelazi u Split 1. listopada 1929., pa će u tom gradu konačno ostati do danas, uz promjenu nekoliko lokacija na kojima je djelovao.

Važno je da su nova organizacija, školovani kadrovi i povećani zahtjevi 1937. godine rezultirali daljnjim unapređenjem te hidrografske institucije. Od tada, u tom trenutku sa 77 godina, nosi ime *Hidrografski institut*. Tom nazivu, u novije vrijeme, tek će se pridodati atribut hrvatski.

tence, this Office, continuing the practice from its Milan period (1815-1839), closely cooperated with the Imperial and Royal Military Geographic Institute in Vienna on the editing and printing of charts and related publications.

In the course of these events in Eastern Adriatic, the results from Beautemps-Beaupré's campaigns in the early 19th century came to be presented to the public. First in France, a series of black-and-white navigational charts of Eastern Adriatic was published from 1820 to 1821. In 1849, an integral "Report" was issued in the French Hydrographic Annual (*Annales hydrographiques*). Shortly afterwards, Alexandre le Gras issued his navigational guide of the Adriatic (*Manuel de la navigation dans la mer Adriatique, d'après Marieni, Beautemps-Beaupré, etc., et les documents les plus récents*, Paris, 1855) published by the French General Depot of the Navy (*Dépôt général de la Marine*). The very title of that guide emphasized that it was patterned after the work of Marieni. Marieni in his turn was able to edit his Portolano in 1830 and an enlarged edition in 1845 owing to the fact that he possessed the results of Beautemps-Beaupré's investigations, whose copies were in custody of the Military Geographic Institute in Milan. Moreover, Beautemps-Beaupré himself was explicitly mentioned, reference being made to his published "Report" and his printed navigational charts.

Most interesting is the fact that certain part of Beautemps-Beaupré's "Report" is a highly professional geostrategic analysis of ports, channels, bays and anchorages in Eastern Adriatic, for the idea of the French navy to build a system of naval bases and other military facilities in this area should their rule be continued. The "Report" was published in 1849. From 1850 to 1860 Austrian general Lazar Mamula began to turn systematically the gulf of Boka Kotorska into an Austrian naval base outpost. However, by the decree of the Austrian Supreme Command issued in 1853, Pula became the major naval port of the empire. Taking into account Beautemps-Beaupré's proposals presented to Napoleon in his "Report", from 1849 being available to the highest Austrian officers, such sequence of events is by no means accidental.

One should bear in mind that on the basis of these results, after several hydrographic survey campaigns and numerous issued navigational charts, by the end of the 19th century the Hydrographic Office in Pula in its own right published the first edition of a navigational guide to the Adriatic: *Segelhandbuch für das Adriatische Meer* (1893), and several years later its second edition: *Segelhandbuch der Adria* (1906). Thus, as far back as then Beautemps-Beaupré made a decisive influence on the hydrography and cartography of the Adriatic Sea.

Similar geopolitical changes which caused the Hydrographic Office to move from Trieste to Pula were in progress in the 20th century, too. Since in 1918 Pula came under the Italian authority, a part of the technical personnel, equipment, charts and other rescued material, together with such items collected in other parts of Eastern Adriatic, were backbone for the new Hydrographic Office in Tivat in 1922, a true heir to the Office in Pula. By 1923 it was moved to Dubrovnik where the Maritime Academy had been opened. From there the Office finally moved to Split on 1 October 1929, where it has remained to the present day.

What matters is that the new structure, educated personnel and higher standards were responsible for further advancement of the 77 year old institution at that time, which has since been known under the name of the Hydrographic Institute. The attribute of Croatia was added to that name in recent times. Nowadays, marking no less than 146 years of organised activity,

Danas, bilježeći čak 146 godina organiziranog rada, uz mjestimične kraće prekide zbog rata, bit će općepoznat u svijetu kao *Hrvatski hidrografski institut*.

Republika Hrvatska sa svojim Hrvatskim hidrografskim institutom, izravnim sljednikom rezultata Beautemps-Beaupréovih hidrografskih i drugih znanstvenih istraživanja započetih 1806., tj. prije puna dva stoljeća, među rijetkim je državama svijeta koja ima tako dugu tradiciju znanstvene valorizacije vlastita mora radi maksimalne sigurnosti plovidbe njegovim akvatorijem.

Kako bi se primjerno obilježila ta značajna obljetnica, nastalo je ovo djelo. Pritom valja istaknuti da se provedeno povjesno-znanstveno istraživanje protegnulo na gotovo petnaestak godina, čemu je temeljni razlog što Beautemps-Beaupréovi radovi danas nisu očuvani na jednom mjestu, već u brojnim europskim knjižnicama i arhivima. Ponajprije to su: *Bibliothèque nationale de France* - Paris, *British Library* - London, *Centre historique des Archives nationales* - Paris, *Hrvatski državni arhiv* - Zagreb, *Kriegsarchiv* - Wien, *Nacionalna i sveučilišna knjižnica* - Zagreb, *Nacionalna in univerzitetna knjižnica* - Ljubljana i *Österreichische National Bibliothek* - Wien.

Pribaviti sve ono što te institucije danas čuvaju u svojim spremištima, gotovo je nemoguće. Ipak se uspjelo dobiti snimke najvećeg dijela te prevrijedne povjesne građe, pa je tijekom oblikovanja rukopisa uključena u ovo djelo. Dakako, pritom su autoru nesebično pomogli brojne kolegice i kolege, bez čega ova knjiga, sasvim sigurno, nikad ne bi mogla biti dovršena. Stoga im i na ovom mjestu izražavam iskrenu kolegjalnu zahvalnost.

U vezi s koncepcijom ove knjige potrebno je istaći samo najvažnije. Prvo, u temelj je stavljeno Beautemps-Beaupréovo "Izvješće" koje je kao jedinstven tekst, za obje kampanje, 1806. i 1808.-1809., objavljeno 1849. godine u prvom broju francuskog Hidrografskog godišnjaka. S obzirom na to da je taj tiskani primjerak prilično rijedak po knjižnicama, donijelo se njegovu presliku. Budući da je 1849. publicirano i separatno izdanje, s potpuno istim sadržajem kao i prvotisak u *Annales hydrographiques*, s tim da se jedino promijenila paginacija, njega se nije donijelo, ali su oba izvornika u bilješkama usporedo citirana. Jednako tako, nije se donijelo ni presliku rukopisnog izvornika "Izvješća" koji se čuva u Nacionalnoj i sveučilišnoj knjižnici u Zagrebu, s obzirom na to da se u njemu ne daje cjelina svih istočnojadranskih istraživanja, već jedino kampanja 1806. godine. S druge strane, ono je u cjelini uključeno u spomenuti prvotisak, pa su tom prigodom ispravljene i neke slučajne pogreške. U takvoj situaciji, logično je bilo dati presliku onog što je autor, Beautemps-Beaupré, držao da treba objaviti. Time se ni na koji način ne umanjuje vrijednost zagrebačkog rukopisnog izvornika, što se pokazalo i njegovim mjestimičnim citiranjem u znanstvenom aparatru ove knjige.

U kartografski dio uključene su sve karte, planovi i panorame do čijih se koliko-toliko kvalitetnih snimaka moglo doći. Naravno da je i "Izvješće" i kartografski materijal trebalo opskrbiti prikladnim indeksima ustaljenima za ovakva djela.

U predočavanju postignutih rezultata znanstvenog rada bilo je i prilično raznolikih dvojbi, ponajprije vezanih uz geografsko nazivlje, koje se na ovoj obali tijekom različitih povjesnih razdoblja raznoliko bilježilo. Beautemps-Beaupré u tome nije nikakav izuzetak. Trebalо je, u tom smislu uspostaviti korelacije između njegovih i današnjih imena. Primjerice, lako je bilo s njegovim *Canale de Calamota*, jer je to danas *Koločepski kanal*. Identičan odsječak mora jedan je put nazvan romanski, danas hrvatski. Puno je složenije s prolazom između Koločepa i Lopuda, što su danas *Koločepska vrata*, a u tekstu "Izvješća" (na njegovim ih kartama nema), daje se "opisno ime", no i njega dvojako. Jednom *passe entre Mezzo et Calamota*, a drugi put *passe entre Calamota*

except for short breaks during the war, it has been known worldwide as the *Hydrographic Institute of the Republic of Croatia*.

The Republic of Croatia, with its Hydrographic Institute as direct successor to the results of Beautemps-Beaupré's hydrographic and related investigations initiated two centuries ago, is among few countries in the world boasting such a long tradition in the scientific evaluation of the sea to ensure the utmost safety of navigation in its waters.

This book was produced to celebrate this significant anniversary. It should be pointed out that the historical scientific research took some fifteen years, chiefly because of the fact that today Beautemps-Beaupré's works are not kept in one place but in numerous European libraries and archives: *Bibliothèque nationale de France* in Paris, *British Library* in London, *Centre historique des Archives nationales* in Paris, *Croatian State Archives* in Zagreb, *Kriegsarchiv* in Vienna, *National and University Library* in Zagreb, *Nacionalna in univerzitetna knjižnica* in Ljubljana, and *Österreichische National Bibliothek* in Vienna. To obtain everything that these institutions presently hold in their collections is almost impossible. However, we managed to get reproductions of most of those valuable historical items, and all of them have been included in this study. In doing so, of great assistance to the author were numerous associates to whom he would like to express his gratitude, as their help was essential for completing this book.

As for the conception of the book, several most important issues should be pointed out. First, the bulk of the work is Beautemps-Beaupré's "Report" whose complete text from both campaigns (1806 and 1808-1809) was published in 1849 in the first issue of the French Hydrographic Annual. As this printed issue can hardly be found in libraries, its facsimile was included. The separate edition published the same year, having identical contents like the first-print in *Annales hydrographiques* but different pagination, was not included, but both originals were cited in the notes. Neither was included the facsimile of the original manuscript of "Report" kept in the National and University Library in Zagreb, because it renders only the campaign of 1806 but not his entire Eastern Adriatic investigations. On the other hand, the entire original manuscript was included in the first-print, and some accidental mistakes corrected. It was therefore logical to present the facsimil of what Beautemps-Beaupré had believed it necessary to be published. This has in no way diminished the value of the original manuscript kept in Zagreb, which is proved by citations in the scholarly apparatus of this book.

The cartographic part includes all the charts and panoramic maps whose adequate reproductions were available. Both the "Report" and cartographic material had to be provided with appropriate indexes.

While rendering the results of the scientific work numerous doubts arose, chiefly concerning geographic names, which in different historical periods had been recorded in different ways. Beautemps-Beaupré was not an exception to that. In this respect, it was necessary to make correlations between his names and the modern ones. For example, it was easy with his name *Canale de Calamota* which is *Koločepski Kanal* today, i. e. identical section of the sea once given in Romanic and today in Croatian. Much more complex is the naming of the passage between Koločep and Lopud which is *Koločepska Vrata* today. On his charts this name is missing, while in the text of "Report" a descriptive name is given in two different ways: once *passe entre Mezzo et Calamota* and next time *passe entre Calamota et Mezzo*, reversing the order of islands. Even

et Mezzo, dakle obratnim redoslijedom otoka. Još nezgodnije je bilo s *bassin du Centre* u Boki kotorskoj, što je danas *Tivatski zaljev*. Sve te situacije razriješilo se tako što se, kad je to zbog jasnoće opisa bilo moguće, zadržalo hrvatsku prevedenicu francuskog izvornika, npr. iz *bassin du Centre* - Središnji bazen, uz isticanje u tekstu ili bilješkama kako se to danas stvarno naziva. Osim toga, tu su i indeksi, koji će čitatelju u tom pogledu biti od veće pomoći.

Drugi je problem bilo brojno ponavljanje, pa se ono izbjeglo kada je to bilo moguće. Uz njega ide i raspored grude, po kojemu se prilično razlikuju "Izvješća" jedne od druge kampanje. Tako za 1806. godine, manje-više, slijedeći obalu od NW prema SE, opisuje rezultate koje je dobio od luke do luke, uključujući u to kanale i zaljeve. Suprotno od toga, za kampanju 1808.-1809. ide od SE prema NW, pa prvo predočava sve o Boki kotorskoj, iza koje pridodaje kratak tekst M. Skurića o obali rt Oštra na ulazu u Boku kotorskou - Budva (Sv. Stefan - Spič), pa već time narušava taj drukčiji slijed. Naime, u produžetku mu je opis dubrovačkog područja, ali i tu prvo opisuje Koločepski kanal, njegove luke, sidrišta i zaljeve, da bi pri kraju dao rezultate o Dubrovniku, Cavtatu i Moluntu. U takvoj situaciji, optimalno je bilo cijeli taj opis, uključujući u to i rezultate istraživanja njegovih karata, planova i panorama, dati od NW prema SE, za svaku luku, kanal, zaljev i slično, posebno. Pritom se zgodnim pokazalo uspostaviti shemu koje se nastojalo držati za svaku takvu geografsku točku: 1. geografski podaci, 2. opća pomorska i meteorološka obilježja, 3. vojnopolomorska obilježja, 4. ostalo i 5. kartografski prikaz. Tako se dobio sustavan opis istočnog Jadrana, dakako u granicama onoga što je dao istraživani skup povijesnih izvora.

U konačnici, sve je to trebalo staviti u odgovarajući povijesni kontekst. Djelomično se to, u grubim crtama, učinilo već ovim predgovorom, a u strukturi knjige puno detaljnije s pratećim nužnim znanstvenim aparatom.

Budući da je pomorstvo interdisciplinarno, a rezultati Beautemps-Beaupréovih istraživanja u temelju su pomorski, nužno se moralo analitički tekst opskrbiti potrebnim brojem bilježaka, koje nisu služile samo za citiranje relevantne literature i povijesnih izvora, već i izravno valoriziranje svega što je postigao. Time se nastojalo tekst poviše crte učiniti što čitkijim, ali da to ni na koji način ne bude nauštrb znanstvene argumentacije. Koliko se u svim tim nastojanjima uspjelo, najbolje će pokazati istraživanja drugih autora, ili barem primjena ovih rezultata u sličnim znanstvenim proučavanjima.

Autor

more embarrassing was the situation with *bassin du Centre* in Boka Kotorska which is *Tivatski Zaljev* today. These ambiguities were solved so that the Croatian translation of the French original was kept where possible, e. g. *bassin du Centre* - Central basin, featuring its modern name in the text or in the notes. Indexes were provided to offer a reader additional help in this respect.

Another problem was numerous repeating of what had already been said, but every effort was made to avoid it. The arrangement of items differs a lot in the "Reports" from the two campaigns. Thus, for 1806, following the coast from NW to SE, he described the results obtained from port to port including channels and bays. On the contrary, in the campaign of 1808-1809 he followed the coast from SE to NW, rendering first Boka Kotorska, with a short text by M. Skurić about the coast between the point Oštra at its entrance and Budva (Sv. Stefan - Spič). He proceeded with the description of the Dubrovnik region, first describing Koločepski Kanal with its ports, bays and anchorages, and finally rendering the results on Dubrovnik, Cavtat and Molunat. In such a situation, the best solution was to give the whole description from NW to SE for each port, bay or anchorage separately. In this respect, it proved convenient to make the following scheme for each geographic point: 1. Geographic information; 2. General maritime and meteorological characteristics; 3. Naval characteristics; 4. Other information; 5. Cartographic representation. Thus, a systematic description of Eastern Adriatic has been achieved, of course within the limits of what the researched historical sources provided.

Finally, everything had to be placed within an appropriate historical context, which has been partly achieved in this preface, while throughout the body of the book it has been explained with far more details, and matched with the necessary scholarly apparatus.

Since maritime science is an interdisciplinary field, and the results of Beautemps-Beaupré's investigations basically maritime, it was necessary to provide the analytical text with notes, not only for citing of relevant references and historical sources but also for evaluation of everything that Beautemps-Beaupré had achieved. In this way, efforts were made to render the text above the line as readable as possible, yet definitely not at the expense of the scientific argumentation. What success has been achieved by these efforts will be best revealed by investigations of other authors or at least by the use of these results in similar scientific studies.

The Author

## 1. UVODNA RAZMATRANJA

Charles François Beautemps-Beaupré (Neuville-au-Pont, 1766.; Paris, 1854.) francuski je hidrograf i kartograf. Inženjerom pariškog Spremišta karata i planova (*Dépôt des Cartes et plans*), preteči kasnijeg francuskog Hidrografskog instituta (*Service hydrographique de la Marine*),<sup>1</sup> imenovan je 1785. godine. Ustvrdivši da su netočna načela po kojima su se dotad izrađivale pomorske karte, s obzirom na to da su bile temeljene na podacima iz brodskih dnevnika, preciznije prema smjerovima i opažanjima pomoraca, nastojao je usavršiti metode za kvalitetniju izradu tog prevažnog materijala za plovidbu. U tom cilju 1791. ukrcava se na jedrenjak "La Recherche", koji je upućen u potragu za nestalom ekspedicijom broda "La Pérouse" u Zapadnom Pacifiku. Tijekom te plovidbe izvodi astronomski i geodetska opažanja za određivanje geografskih položaja, te primjenjuje računsku metodu presijecanja unatrag mjereći kutove hidrografskim krugom, a ne kompasom. Kompas mu služi samo za određivanje magnetske deklinacije.<sup>2</sup>

Godine 1804. postaje podšef spomenutog Spremišta karata i planova. Nekoliko puta između 1799. i 1805. izvodi hidrografske, oceanografske i geomagnetske izmjere akvatorija oko ušća rijeke Rajne u vezi s Napoleonovom namjerom da na ušće te rijeke izgradi ratnu luku.

Dok se to događalo, mirom u Campoformiju 1797. godine ukinuta je višestoljetna Mletačka Republika, pa je cijelina Istre, kao i Dalmacija, došla pod austrijsku vlast. Mirom u Bratislavi 1806. ista ta područja, zajedno s Dubrovačkom Republikom, potпадaju pod vlast Napoleona. Nakon mira u Schönbrunnu 1809. godine Napoleon od Dalmacije, Istre, civilne Hrvatske, Vojne krajine i nekih slovenskih zemalja osniva Ilirske pokrajine sa sjedištem u Ljubljani.<sup>3</sup>

U kontekstu takvih prilično burnih događanja, kad je Napoleon odlučio utvrditi Istru i Dalmaciju, Beautemps-Beaupré na početku 1806. dolazi na istočni Jadran sa zadaćom izvršiti hidrografsku izmjeru, oceanografska i geomagnetska istraživanja tog akvatorija, uz istovremeno topografsko snimanje te geostrateško uočavanje što bi od postojećih luka, zaljeva, sidrišta i kanala moglo biti dovoljno dobro za privremeno ili trajno stacioniranje flotnih snaga francuske ratne mornarice.<sup>4</sup> Na temelju polučenih rezultata tijekom 1806. i 1808.-1809. godine izrađuje brojne pomorske karte jadranskih luka, kanala i zaljeva od Pirana do Boke kotorske, pa tom prigodom prvi put u povijesti Jadrana u praksi primjenjuje geometrijska pravila perspektive. K tomu, izrađuje opširno "Izvješće" o svim rezultatima vlastitih znanstvenih istraživanja.<sup>5</sup>

1. Prema STIJELJA, R., 1975, 666, sustavan rad na kartografiji i hidrografiji u Francuskoj nastaje nakon 19. studenog 1720. utemeljenjem posebne institucije: *Dépôt des Cartes et plans, journaux et mémoires concernant la navigation* u Parizu. Već 1737. počinje izdavanje pomorskih karata. Tu će desetljećima raditi J. N. Bellin, za našu povijest izuzetno značajan po svojem "Geografskom opisu Jadrana" (BELLIN, J. N., 1771.). U isto toj instituciji djeluje i C. F. Beautemps-Beaupré, praktički cijeli svoj radni vijek. Godine 1885. Dépôt mijenja ime u *Direction général de Services hydrographiques*, da bi u 20. stoljeću dobio naziv *Service hydrographique de la Marine*.

2. Magnetska je deklinacija prirodni magnetizam koji bitno može utjecati na magnetsku iglu brodskog kompasa. Na Jadraru su vrijednosti magnetske deklinacije danas oko  $1^{\circ} 30' E$ , a u vrijeme Beautemps-Beaupréovih istraživanja istočnog Jadrana red njihove veličine bio je oko dvadesetak stupnjeva, ali na zapad. O tome KOZLIČIĆ, M., 1995a, 259-279; IDEM, 1995b, 41-138.

3. Detaljnije ZWITTER, F., 1964, 25-36.

4. Beautemps-Beaupré svoju je kampanju na istočnom Jadraru trebao dovršiti najvjerojatnije do početka ljeta 1807. godine. Međutim, zbog neprijateljstava s Rusima istraživanja naglo prekida u Splitu 20. rujna 1806. godine (BEAUTEMPS-BEAUPRÉ, C. F., 1849a, 71; IDEM, 1849b, 42). Tako je prva kampanja obuhvatila obalni potez od Pirana do Splita (IDEM, 1849a, 32-71; IDEM, 1849b, 3-42). Istraživanje nastavlja 1808. i dovršava 1809. na području Stonski kanal - Boka kotorska, pa je to njegova druga i posljednja kampanja (IDEM, 1849a, 72-121; IDEM, 1849b, 43-93).

## 1. INTRODUCTION

Charles François Beautemps-Beaupré (Neuville-au-Pont 1766 - Paris 1854) was a French hydrographer and cartographer. In 1785 he was appointed an engineer to the Chart Depot in Paris (*Dépôt des Cartes et Plans*), predecessor of the French Hydrographic Institute (*Service hydrographique de la Marine*).<sup>1</sup> Having ascertained that the principles on which charts had been produced so far were incorrect, as they were based on information from log books, or on mariners' directions and observations, he made efforts toward improving the methods for the production of that invaluable navigational material. In 1791 he embarked the sailboat "La Recherche", which set out in search of the expedition disappeared in Western Pacific on board "La Pérouse". During this voyage he conducted astronomic and geodetic observations for determining geographic positions, applying the method of resection measuring angles with hydrographic circle, not with compass. He used compass only for determining the magnetic declination.<sup>2</sup>

In 1804 Beautemps-Beaupré became deputy head of the Chart Depot. Several times between 1799 and 1805 he carried out hydrographic, oceanographic and geomagnetic surveys in the sea area surrounding the Rhine mouth, due to Napoleon's intention to build a naval port there.

By the Treaty of Peace at Campoformi in 1797, the centuries-old Venetian Republic was dissolved, so that Istria and Dalmatia came under Austrian power. By the Peace of Bratislava in 1806, these regions together with the Dubrovnik Republic came under the rule of Napoleon. After the Peace of Schönbrunn in 1809, Napoleon founded the Illyrian Provinces of Dalmatia, Istria, the civilian Croatia, the Croatian Military Border, and some Slovenian countries, with the centre in Ljubljana.<sup>3</sup>

In the context of these troubled events, after Napoleon had decided to fortify Istria and Dalmatia, early in 1806 Beautemps-Beaupré came to Eastern Adriatic with the task of carrying out hydrographic, oceanographic and geomagnetic survey of these waters. He was also charged with topographic recording and geostrategic observations to define which of the existing ports, bays, anchorages and channels could be appropriate for the temporary or permanent deployment of the French naval fleet.<sup>4</sup> Based on the results from his campaigns of 1806 and 1808-1809, he produced numerous charts of the Adriatic ports, channels and bays from Piran to Boka Kotorska, and for the first time in the history of the Adriatic he applied geometrical rules of perspective. He also made an extensive "Report" on all the results of his own scientific investigations.<sup>5</sup>

1 According to STIJELJA, R., 1975, 666, a systematic work on cartography and hydrography began in France after 19 November 1720 when a special institution was established in Paris: *Dépôt des Cartes et plans, journaux et mémoires concernant la navigation*. As early as 1737 they started to publish nautical charts. J. N. Bellin, very important to our history for his "Geographic description of the Adriatic" (BELLIN, J. N., 1771), worked there for decades. After him, C. F. Beautemps-Beaupré spent his entire active life there. In 1885 the Dépôt changed its name into the *Direction générale de Services hydrographiques*, while in the 20th century it was given the name *Service hydrographique de la Marine*.

2 Magnetic declination is natural magnetism which can significantly influence the magnetic needle of a mariner's compass. Today, the values of magnetic declination in the Adriatic are about  $1^{\circ} 30' E$ , while at the time of Beautemps-Beaupré's investigations of Eastern Adriatic their order of magnitude was about twenty degrees west. About that KOZLIČIĆ, M., 1995a, 259-279; IDEM, 1995b, 41-138.

3 More detailed in ZWITTER, F., 1964, 25-36.

4 Beautemps-Beaupré probably had to complete his campaign in Eastern Adriatic until the early summer of 1807. However, due to hostilities towards Russians he suddenly interrupted his investigations in Split on 20 September 1806 (BEAUTEMPS-BEAUPRÉ, C. F., 1849a, 71; IDEM, 1849b, 42). Therefore his first campaign included the stretch of coast from Piran to Split (IDEM, 1849a, 32-71; IDEM, 1849b, 3-42). The survey was continued in 1808 and completed in 1809 in the area between Stonski Kanal and Boka Kotorska, and this was his second and last campaign (IDEM, 1849a, 72-121; IDEM, 1849b, 43-93).

U početku je taj dokument tretiran kao vojna tajna, jer su istraživanja bila usmjerenja na planirano francusko vojno utvrđivanje istočne obale Jadrana. Kasnije, definitivnim eliminiranjem takvih pretenzija u francuskim vladajućim krugovima, "Izvješće" se tiska u prvom broju francuskog Hidrografskog godišnjaka (*Annales hydrographiques*), a zatim i kao separatni otisak, pa time postaje dostupno svjetskoj znanstvenoj javnosti, posebno pomorskim krugovima.<sup>6</sup>

Slično je s vizualizacijom dobivenih rezultata, prvo izradom hidrografskih izvornika većih dimenzija, koji se danas čuvaju u pariškom Centre historique des Archives nationales, a dio koji se odnosi samo na kampanju 1806. godine u zagrebačkoj Nacionalnoj i sveučilišnoj knjižnici.<sup>7</sup> Temeljem tih izvornika bit će izrađena serija plovidbenih karata koja se prvi put tiska 1820.-1821., a zatim, više puta dotiskuje. Tako i taj dio postaje trajno dostupan pomorcima.

Što se tiče kasnijeg djelovanja Beautemps-Beaupréa, treba istaknuti da po povratku s Jadrana prvo obavlja izmjeru obale između Rajne i Labe, a 1816.-1838. obala Francuske. Nekoliko stotina pomorskih karata i planova, nastalih iz svih dotadašnjih njegovih hidrografskih i drugih istraživanja, složio je u albume "Nouveau Neptune" i "Pilote Français", izradio albume pomorskih karata i panorama obala duž kojih je plovidba otežana, te odredio točne elemente morskih mijenja. Umirovljen je 1848. u 82. godini. Kroz 63 godine plodnog rada utemeljuje načela znanstvene hidrografije i odgaja generacije kvalitetnih hidrografskih inženjera. Zato su ga Francuzi i Englezi s razlogom nazvali ocem hidrografije.<sup>8</sup>

5. Osim tiskanih izvornika (BEAUTEMPS-BEAUPRÉ, C. F., 1849a, 32-121; IDEM, 1849b, 1-96), koji su temelj ovom radu, postoji i rukopisno "Izvješće", BEAUTEMPS-BEAUPRÉ, C. F., 1807, ali se odnosi samo na prvu kampanju 1806. godine. Pisano je crnilom na papiru folio formata. Ponegdje je prilično izbljedilo, čak do razine čitljivosti. Čuva se u posebnom fasciklu i integralni je dio Beautemps-Beaupréova djela o hidrografskoj izmjeri Jadrana (Nacionalna i sveučilišna knjižnica u Zagrebu, Kartografski odjel, sign. A-III-S<sup>18</sup>-9). Ukupno ima 67 stranica. Prve dvije (naslovica i sadržaj) nisu numerirane. U nastavku su stranice s brojevima 1-64. Na kraju je zaključna stranica bez broja. Na Jadran općenito i obalu zapadne Istre odnose se stranice 1-34, a dalje se, na 35-67, opisuje: Unjiski kanal (str. 35), Zadarski kanal (35-37), Luka Zadar (37-40), Pašmanski tjesnac (40-44), Luka Šibenik (44-51), Prilazi Šibeniku (51-60), Luka Rogoznica (60-62) i Luka Split (62-64). Iz naslova rukopisnog izvornika vidljivo je da je ono izrađeno u ime Napoleona Bonapartea (1769.-1821.), francuskog cara i talijanskog kralja. Istra i veći dio Dalmacije bili su uključeni u napoleonsku Kraljevinu Italiju, utemeljenu početkom 1806. godine sa sjedištem u Milanu (podrobnije ŠETIĆ, N., 1989, 19-24). Neposredni je nadređeni na ovom terenu Beautemps-Beaupréu bio viceadmiral Denis Decrès (1761.-1820.). Taj je od 1801. godine obnašao funkciju ministra francuske Ratne mornarice, i uz to i funkciju ministra Kolonija Francuskog Carstva, kako se to priopćuje u naslovu izvornika. Drugi nadređeni Beautemps-Beaupréu je bio divizijski general François-Marie Caffarelli du Forga (1766.-1849.), Ministar Rata i Mornarice Kraljevstva Italije. O njima BARAS, F., 1984, bilješka 2. na str. 162. i bilj. 1. na str. 202.

6. BEAUTEMPS-BEAUPRÉ, C. F., 1849a, 32-121. U redakcijskoj bilješci broj 1., str. 32, kaže se kako je Pomorski arhiv, "tiskajući nakon odluke Savjetodavnog odbora, rezultate dobrog rada obavljenog 1806., 1808. i 1809. na istočnoj obali Jadrana našeg čuvenog hidrograфа Beautemps-Beaupré", imao dva cilja. Prvo, da "ne bi na duže vrijeme lišio pomorce vrijednih zapožanja sadržanih u ovom radu" i drugo, "kako bi odao počast znanstveniku koji gotovo pola stoljeća upravlja s tolikim sjajem skupinom hidrografskih inženjera i koji je zadužio Francuskog tolikim izvrsnim djelima". Na kraju se ističe: "Za neke od detalja koje sadrže ova izvješća činit će se da su danas izgubili svoju važnost. Ali, iz poštovanja prema njihovom časnom autoru, reproducirali smo ih onakvima kakvi su predstavljeni caru". Zanimljivo je da se osim tiskanja u tom uglednom časopisu (*Annales hydrographiques*, Pariz, 1849.), otisnulo i separatno izdanie kao posebna knjižica - BEAUTEMPS-BEAUPRÉ, C. F., 1849b, 1-96 (Bibliothèque nationale de France - Paris, sign. FRBNF30074021; Library of Congress - Washington, sign. 4HE-1306).

7. Centre historique des Archives nationales - Paris, sign. Marine 6 JJ 54, 6 JJ 54 bis, 6 JJ 54 ter (KOLANOVIĆ, J. - ŠUMRADA, J., 2005, 90-92); Nacionalna i sveučilišna knjižnica - Zagreb, sign. A-III-S<sup>18</sup>-9, S-JZ-XVIII-68 (ČANKOVIĆ, D., 1985, 377-379; KOLANOVIĆ, J. - ŠUMRADA, J., 2005, 521-522).

At first this document was considered to be a military secret, as the purpose of investigations was the French plan of fortifying the Eastern Adriatic coast. Later, after such claims had been eliminated by the French establishment, the "Report" was published in the first issue of the French Hydrographic Annual (*Annales hydrographiques*), and then as a separate print. In this way it was made available to the international scientific community, especially to the maritime circles.<sup>6</sup>

To visualise the obtained results, he first produced large-sized hydrographic fair charts. Today they are kept in the Centre historique des Archives nationales in Paris, while those relating to the campaign of 1806 in the National and University Library in Zagreb.<sup>7</sup> They were the basis for the production of a series of navigational charts first printed between 1820 and 1821, and reprinted several times afterwards, to become permanently available to mariners.

Having returned from the Adriatic, Beautemps-Beaupré carried out the survey of the coast between the Rhine and the Elbe, and from 1816 to 1838 of the coasts of France. He assembled several hundred charts produced throughout his hydrographic and other investigations into albums "Nouveau Neptune" and "Pilote Français". He also made albums of charts and panoramic maps of the coasts difficult for navigation, and defined precise elements of tides. In 1848 he retired at the age of 82. Throughout 63 years of the productive work he established the principles of scientific hydrography and brought up generations of excellent hydrographic engineers. It was therefore with good reason that the French and the English called him the father of hydrography.<sup>8</sup>

5 Besides the printed originals (BEAUTEMPS-BEAUPRÉ, C. F., 1849a, 32-121; IDEM, 1849b, 1-96), which are the basis of this work, there is also the "Report" in manuscript, BEAUTEMPS-BEAUPRÉ, C. F., 1807, referring just to the first campaign of 1806. It was written in ink on the folio format paper, rather faded in places, even to the level of readability. The "Report" is kept in a special folder as an integral part of Beautemps-Beaupré's work on the hydrographic survey of the Adriatic (National and University Library in Zagreb, Cartographic Department, CN A-III-S18-9). It has a total of 67 pages, of which the first two (title page and contents) were not numbered. Further pages were numbered 1-64. The final page was not numbered. The pages 1-34 deal with the Adriatic in general and the coast of Western Istria, while the pages 35-67 cover the following: Unjiski Kanal (35), Zadarski Kanal (35-37), Port of Zadar (37-40), Pašmanski Tjesnac (40-44), Port of Šibenik (44-51), Approaches to Šibenik (51-60), Port of Rogoznica (60-62) and Port of Split (62-64). It is evident from the title of the manuscript that it was made on behalf of Napoleon Bonaparte (1769-1821), French emperor and Italian king. Istria and a greater part of Dalmatia were included in the Napoleonic Kingdom of Italy, established in the beginning of 1806, with the centre in Milan (in more detail ŠETIĆ, N., 1989, 19-24). His first superior in this area was vice-admiral Denis Decrès (1761-1820), who from 1801 filled the post of Minister of the French Navy. He was also Minister of Colonies of the French Empire, as referred to in the title of the original. His second superior was division general François-Marie Caffarelli du Forga (1766-1849), Minister of the War and Navy of the Kingdom of Italy. About them BARAS, F., 1984, note 2 p. 162 and note 1 p. 202.

6 BEAUTEMPS-BEAUPRÉ, C. F., 1849a, 32-121. Editorial note 1, p. 32, says that the Maritime Archive, "after the decision of Advisory Board, when printing the results of a good job done in Eastern Adriatic in 1806, 1808 and 1809 by our renowned hydrographer Beautemps-Beaupré", had two objectives. First, "not to deprive mariners of important observations contained in this work" and second, "to pay tribute to the scientist who for almost half a century has directed so brilliantly a group of hydrographic engineers and obliged France for so many excellent works". Finally it states: "Some details contained in these reports may seem to have lost their meaning. But, out of respect for their respected author we have reproduced them as they were presented to the emperor". It is interesting that besides being printed in this distinguished journal (*Annales hydrographiques*, Paris, 1849), a separate edition was published in a booklet - BEAUTEMPS-BEAUPRÉ, C. F., 1849b, 1-96 (Bibliothèque nationale de France - Paris, CN FRBNF30074021; Library of Congress - Washington, CN 4HE-1306).

7 Centre historique des Archives nationales - Paris, CN. Marine 6 JJ 54, 6 JJ 54 bis, 6 JJ 54 ter (KOLANOVIĆ, J. - ŠUMRADA, J., 2005, 90-92); National and University Library - Zagreb, CN A-III-S18-9, S-JZ-XVIII-68 (ČANKOVIĆ, D., 1985, 377-379; KOLANOVIĆ, J. - ŠUMRADA, J., 2005, 521-522).



Slika 1. Charles François Beaumets-Beaupré (Neuville-au-Pont, Marne, 1766.; Paris, 1854.). U podlozi je veduta iz CARTA, 1822-1824. (Državni arhiv, Zadar), a portret je preuzet iz CHAPUIS, O., 1999.

Fig. 1. Charles François Beaumets-Beaupré (Neuville-au-Pont, Marne, 1766.; Paris, 1854.). In the background, a view from CARTA, 1822-1824. (State Archives, Zadar), while the portrait was taken from CHAPUIS, O., 1999.

RECONNOISSANCE HYDROGRAPHIQUE  
DES PORTS DU ROYAUME D'ITALIE

*situés sur les côtes du Golphe de Venise*

Commencé en 1806

PAR ORDRE DE SA MAJESTÉ

Napoléon Bonaparte Grand  
Empereur des François et Roi d'Italie

EMPEREUR des François et ROI d'Italie  
*sous les Ministères de leurs Excellences*

JACQUE DUMRAU DAUSSY Ministre de la Marine et des Colonies de l'Empire Français et le G<sup>e</sup> DE DI V. CAPPARELLI  
Ministre de la Guerre et de la Marine du Royaume d'Italie

par C.F. Beautemps-Beaupré

Membre de la Légion d'Honneur, Hydrographie sous Chef du Service général de la Marine ..  
afait de l'Ingenieur Hydrographie Daussy et du Lieutenant de l'artillerie Tician ..

.....

PREMIÈRE PARTIE

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Dirigante nel Dipartimento della Marina Italiana  
dal sig<sup>r</sup> Alberio.

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