

Articoli/Articles

QUARANTINE, TRADE AND HEALTH POLICIES  
IN RAGUSA-DUBROVNIK UNTIL THE AGE  
OF GEORGE ARMENIUS-BAGLIVI

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SUMMARY

*A Decree of 1377 of the Rector of Dubrovnik-Ragusa officially issued quarantine. The obligation of a stay for 4 weeks on a separate site (islands or caravensera) originated mainly from the need to protect the safety and quality of the commercial network and merchandise rather than for medical aetiopathogenetic purposes. The well documented network of representatives of the Republic in European ports and cities and the attention of the Ragusan rulers to medicine (the best physicians were sought in the Italian Universities) favoured the first official quarantining as a legal system aimed at protecting the economic interests of the city during the golden age of the Republic. This included the 17th century lifetime of the physician George Armenius-Baglivi, who grew up in the cosmopolitan atmosphere of Ragusa, which explains his marked inclination to develop his medical skills in the best Italian universities, coming from Ragusa to Lecce and finally to Rome. How much uncertainty and obscurity does the passage of time cast over history, if false displaces true even for recent events, which took place right before our eyes?*

[from Plutarch, *The Banquet of the Seven Wise-Men*, quoted by Mirko D. Grmek, *Les Maladies à l'aube de la civilisation occidentale*. Payot, Paris, 1983].

When the Tartars in 1346 decided to attack the Christian merchants and trade-station in the city of Tana, the merchants reached *Caffa* (now Feodosiya on the Crimean coast). Consequently the Tartar army pursued the fugitives as far as *Caffa* and settled their camp outside the walls. The chronicles of that time tell of a

*Key words:* Ragusa-Dubrovnik - Quarantine - Maritime commerce - Baglivi

deadly plague that was coming from the eastern part of Kazakhstan near the Balkhash Lake, to the southern coast of the Crimean Peninsula following the trade routes from Asia, along the Volga and Don Rivers. The pestilence affected the Tartar army with dramatic effects, and the *khan* Gani Bek before the withdrawal ordered using catapults to lob the infected victims over the walls allowing the spread of the disease within the city<sup>1</sup>. Hoping to avoid the plague and the war, many merchants ran away, but some were sick with the plague so that through the Mediterranean sea trade routes the *black death* with twelve galleons arrived in Messina on October 1347, while other "infected" ships arrived in January 1348 in Genoa<sup>2</sup>, and in spring in other ports of Sicily, etc. The spreading of the great pestilence, the fear of this contagious disease and the possibility of avoiding contamination are described in the *Decameron* of Boccaccio, in which a brigade of young people leaves Florence to escape the plague, because they believe the deadly disease may be avoided by preventing contact with infected patients.

A few years later the Rector of the Republic of Ragusa, on the Dalmatian coast, disposed that people coming from the Middle East with their merchandise should stay on two islands near the coast (Mrkan and Bobara, in front of the city of Cavtat, that means "ancient city" in Croatian) for at least 4 weeks in order to observe if they were contagious (Rector's decree of No. 49 of 1377). Was it a sanitary precaution? Or part of a general policy to preserve the interests of the city?

Mc Neill in his fundamental work *Plagues and Peoples* believes that the concept of quarantine, which was introduced in 1346-1347 as the isolation of sick persons and "no entry" dispositions<sup>3</sup>, was a derivation of the biblical prescription for leprosy:

*The Lord said to Moses: "This shall be the law for the leper on the day of his cleansing. He shall be taken to the priest and the priest shall go out beyond the camp. As the priest examines him and shows that the leprosy attack is cured, has left the leper..... he shall come into the camp but stay outside his tent for seven days...[Leviticus 14.1-8].*

*If it shows that the infection in the walls of the house is greenish or reddish... then the priest shall go out to the door of the house and lock the door for seven days [Leviticus 14.38].*

Mc Neill also says that the origin of the spreading of the deadly infectious disease, called *Black Death* because of its high death-rate, was due to the increase of the Mongolian caravan movement in the 13th-14th centuries from far East Asia to the Middle East, whereas the sites of entry of the pestilence into Europe were certainly the ships and the ports. This opinion is supported by the dramatic records of the contemporary chroniclers. For instance, according to the 14th century *Estense Chronicler*, the *black death* rained from a cloud "between Cathay and Persia" as "fire falling in flakes like snow and burning mountains and plains" (*Chronicon Estense*, Muratori ed. *Rerum Italicarum Scriptores* vol.15, III, p. 160), spreading in Europe as a recurrent plague. In the 14th century the public authorities addressed their action especially to prohibit, under penalty of death, the entrance into town of citizens coming from infected lands. Since the dispositions of public hygiene and later on of quarantine were extensively introduced only during the following centuries in many cities on the coast, we may ask why the Dalmatian Ragusa first introduced rules to contain pestilences (in the year 1377), followed by Venice and only years later by other cities on these coasts or in the hinterland.

The present paper will analyse the special position of Ragusa-Dubrovnik, its nature as a free trade centre-town, the attention to medical problems, the need to assess the quality of the goods traded by its ships, and finally comments will be made on the first ruling of quarantine we are aware of. We suggest that these rules in Ragusa have been the result of a civic organization and of the general interest to protect the civic life and commerce. We also suggest that the special "spirit of mind" developed by the Dalmatian-Ragusan people may explain the extraordinary cultural and professional itinerary covered by the Ragusan physician George Armenius-Baglivi, who travelled from Dubrovnik to Lecce, via to Naples and Salerno and then to Northern Italian and Tuscan universities and finally to Rome, where he played a prominent role in the European medical science of that time.

#### *Why Dubrovnik-Ragusa: a city of trades*

The first written record of the ancient city of Ragusa has been found in an anonymous report of a 7th century geo-

grapher of Ravenna, which refers "*Ragusium, id est Epidaurum*". The ancient Epidaurus, currently Cavtat, was a Roman city of the Dalmatian province, which in the early seventh century was attacked by the Avars and the Slavs. The survivors of Epidaurus came across the rocky island or headland of the new city: from the nature of the soil (lau-làuea, in Greek means narrow passage - *Od.* 22.128, 137; *Herodotus* 1.180 - or street, like an entrance of a house or of a city, a port, etc.) is derived *lausium*, than *rausium*. The city was dependent on the East Roman Empire until the 10th century, when it was handed over from the authority of Byzantium to the administration of the Croatian ruler Tomislav; in the year 1000 the Archbishop and the Ragusan nobility offered the city to the Venetian protectorate, which continued until the death of the Emperor Emmanuel Komnena (1180): at that time there are reports of an influence of the Normans located in the South of Italy and only in 1272 was the city independent with an own Statute as a founding act. We have reports of the activities of the city in the archives of the Republic of Ragusa, which today are conserved in an ancient building at the southern end of the largest way of the city, the *Placa-Stradùn* (fig. 1). The building (*Sponza Palace*) had been since 1312 the head office of the mint and of the Customs (because located just in front of the main entrance on the south side of the city, near the port and the caravan route). The first records of documents date from 1022, but regular continuous records date from 1278, when an official reliable service of notariate was organized. Anyway, in the 1153 the city was quoted by the Arab geographer al-Idrisi as the important southern town of Dalmatia<sup>4</sup>. A document of the 1272 A.D. (*Official acts of the Republic*, today conserved in the Historical Archives of Dubrovnik-HAD) records the expenses of official couriers of the Republic, whereas a deliberation of the Minor Council of February 20, 1304 appointed an ambassador to be sent to Bosnia "*for the benefit and the advantage of the merchants and of the whole city of Dubrovnik*", thus indicating official rulings for both the civil life of the city and the commercial interests of the Republic in foreign countries.

In the Historical Archives (HAD) two record books of the 14th and 15th centuries are kept (the so-called *yellow* and *green books*), which describe the diplomatic organization and the rules of the Republic to protect, qualify and increase Ragusan trade and shipping. If certain ancient sources mention a popular assembly which included all citizens and was active in the 11th-12th centuries, at that time the city was progressively organized in two classes: the *plebeians* (including also slaves imported from Bosnia), who had no direct influence on the government, and the *nobility*, which in the 14th century reformed the Statute and introduced the Grand Council (*Consilium Magnum*), i.e. a general Assembly which included all noblemen over 20 years, holders of a certificate of education and good conduct. The *Consilium Magnum* had the power to elect the President of the Republic (*Rector*), a Senate of 30-45 members (*Consilium Rogatorum*) and a Minor Council (*Consilium Minor*) responsible for developing and implementing the Sena-

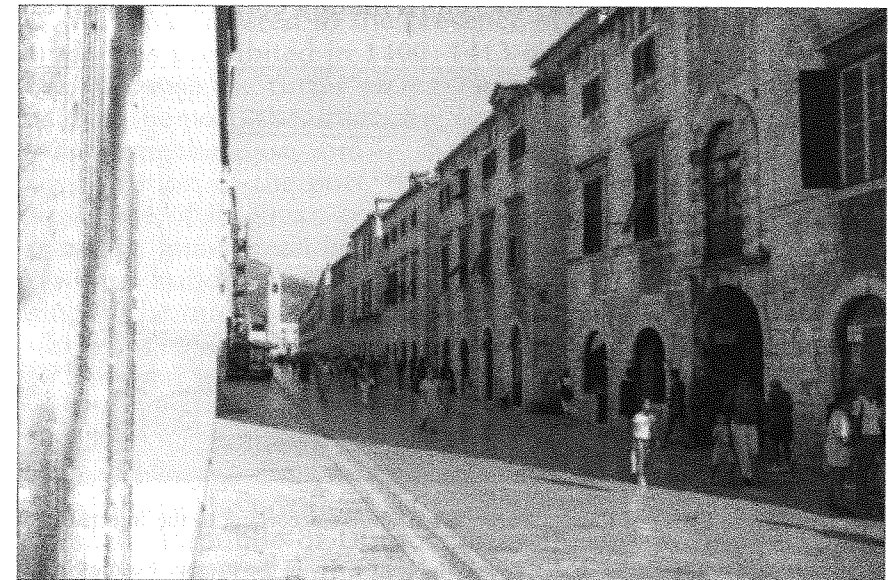


Fig. 1. The Placa-Stradùn (main avenue) of Ragusa-Dubrovnik (the street disposition has remained unchanged from the 12th century until today)

te decisions. The city was fortified, with a 2 Km-wall built in the 10th century and later reinforced at the end of the 13th century and during the 15th century. The inner city was pleasant, built in a Venetian-like style, with the public and most important private buildings well ordered on two sides of a central large avenue, paved in the year 1468 with large rectangular stones. The political and civil life was centered around the La Loggia Square, in which the palaces of the customs (Sponza Palace), the Guard-Palace, the watch-tower, the Palace of Rectors (Knezev dvor) and the church of St. Blasius (the patron of the city) were located. All of these were originally built in the 15th century and a re-building occurred after the great earthquake of 1667.

The geographical location of Ragusa-Dubrovnik (fig. 2) may explain its productive activities: the town is surrounded by mountains so that the agriculture was very poor, whereas the coast and the port are protected from the winds by the mountains behind the city and the long islands in front of the coast. Dubrovnik's vocation was therefore mainly commerce, with an

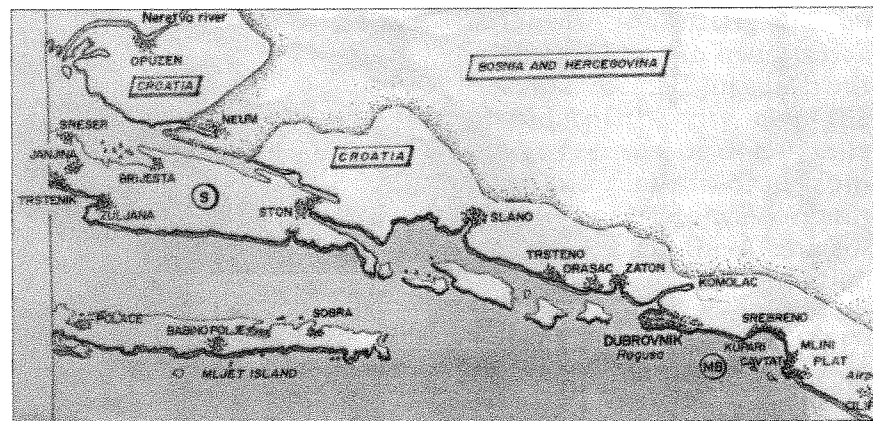


Fig. 2. Map of the area of Ragusa-Dubrovnik (frontiers according to the International recognition, 1992).

S=peninsula of Sabbioncello (today Peljesac); Neum= city in the present Bosnia-Herzegovina State, the same corridor under the Ottoman Empire dividing the Dalmatian coast in the Venetian dominion and in the Republic of Ragusa-Dubrovnik; MB=insulae of Mrkan and Bobara, chosen for the quarantining.

intense activity between the continental territories and the rest of Europe, between the Middle-East and a network of commercial points in the Central and Northern Europe, but also with Mediterranean countries. In the mid-fourteenth century the Ragusans established settlements in the Bosnian mining towns and market places and Ragusan merchants exported silver and lead from Bosnia to Venice, the papal territory of Ancona, Sicily, Syria, Alexandria and Catalonia. For example, in 1427-28 the Ragusan settlements in Visoko consisted of 52 shopkeepers, in Zvornik and Srebrenika more than 200 shops were active, etc.<sup>5</sup>; it was reported that "their shops (*botteghe*) offered all kinds of foreign goods", but also salt (coming from the Ragusan salt-works) and that the requirement of Ragusan merchandise was quality and a great "added value", supplied from Dubrovnik and *via-Dubrovnik*, which was like a "trade-mark" of quality for luxury fabrics, tableware, jewellery, tropical and subtropical fruits, spices, wine, oil and works of art (paintings in particular), etc.<sup>6</sup>.

We have referred to the presence of slaves from Bosnia: the trade was prohibited in 1400, 1413 and 1416, but without success because the *turpis mercantia* was necessary for the portage in the port, the unloading of the ships or the caravans arriving from the East, and in the storehouses of the docks<sup>7</sup>. The organization of the port, the fiscal facilities, the low cost and high rate of Ragusan commerce (fairness in both quality and quantity, guaranteed by the public weigh-house located in the customs building) produced a sort of monopoly of merchandising in the middle-lower Adriatic coast, which was helped by the old firmans and privileges granted by Ottoman authorities in Bosnia and Istanbul. The Ottoman Empire guaranteed the Ragusan ships a safe voyage and prevented the opening of new ports by other countries by the receipt of a regular loyal tribute from the city of Dubrovnik. To stop the Venetian influence and to reinforce the position of friendship with the Ottoman emperors, the Republic of Dubrovnik established a "land-corridor" from Herzegovina to the sea, along the *Neretva* River in front of the Ragusan peninsula of *Sabbioncello* (Peljesac), just in the same way as today's Neum city corridor: thus the frontiers



between the dominion of Venice and the Ragusan territory were defined in the mainland about 100 km to the north from Dubrovnik on the *Neretva* River and in the sea between the Venetian island of *Curzola* and the peninsula of *Sabbioncello* (fig.2). On the other coast of the Adriatic sea, also the papal city Ancona accepted the Ottoman protectorate, whereas a Venice counter-move was made at the end of 16th century when the *Serenissima* opened in Spalatum (Split) a dock with facilities, a warehouse and a lazaret for quarantine, aiming to channel the flow of goods from the hinterland to the ports under its dominion<sup>8</sup>.

It is worth noting that since the founding act of the Republic (the Statute dated 1272) great attention was put by Ragusan citizens to commerce and of course to commercial and maritime rules: the book VII of the Statute was dedicated to the commercial and maritime laws, and customs legislation was approved and modified between 1272 and 1413; finally, a regulation considering trade risks was issued and adopted in a complete form in 1562 (*Regulations for Insurers*)<sup>9</sup>.

#### *Commercial and maritime agreements made by the Ragusan Republic*

As mentioned before, Dubrovnik because it's mountainous land was neither a significant agricultural or manufacturing centre, but a commercial port for transit from the East to the European countries and to the Balkan hinterland. Thus, it is not surprising that Ragusan citizens stressed the need to guarantee the security of commerce, traders and goods: we may find today in the HAD many ancient agreements with kingdoms (1102, with the Croatian king Coleman) or authorities (September 20, 1181 with Kotar's Prince Tripun) of the countries in which goods were transported. The agreements stated the amount of the fare (*magaricium*) for the permission to transport their goods across lands or the possibility of free trading (such as into Bosnia with the agreement of August 29, 1189). It is worth noting that the *peace of Zadar* between the Republic of Venice and the Croatian-Hungarian kingdom stated the freedom of Dubrovnik from the tutorship of Venice. In the fol-

lowing years the Ragusan Senate improved the leadership of the city as a financial center (protected by law from the influence of foreign capitals) and as Mediterranean port in good agreement with Turks and foreign countries, e.g. Spain and the Papal States. In the 14th and 15th centuries consulates were opened by the Senate of Dubrovnik in the most important ports, e.g. Ancona, Pesaro, Ortona, Bari, Barletta, Trani, Molfetta, Otranto, Napoli, Siracusa, Messina, Augusta, Trapani, Catania, Palermo, Malta, Greek islands (Chios, Rhodes, Crete, Zakynthos, Corfu, Milos), Izmir, Istanbul, Marseilles, Nice, Genova, Corsica, Spain (Cadiz, Valencia, Alicante, Mallorca, Cartagena), Portugal, Flanders (Antwerpen), Germany (Hamburg), England (London). In the 16th century the Ragusan flag of the city patron St. Blaise hoisted by more than 200 ships was as popular in the seas like the Venice lion. The consuls were responsible for the judiciary authority on the Ragusan ships and for the control of commerce and ships' requirements (customs and port operations, collection of the sea-trade revenues, reports to the Senate on the type, quantity and quality of the trade-goods). Thus, the Ragusan trade network gained fame and was highly requested for its safe and qualified shipments. This commerce was increased also by the migration to Dubrovnik of many Sephardim, mainly in the first half of the 15th century; they were coming from Spain to this free State (a comparison may be made with Hong Kong in the second half of the 20th century) and contributed to the development of the caravan and maritime trades, which were increased by the relationships with other Jewish communities in the Mediterranean cities and in the Balkans: for their role the Republic acknowledged many Jews as official trade agents (*sensali*) in the port and docks of Dubrovnik (in the Official Acts of 1572 50 *sensali* are recorded, of whom 30 were Jews, 7 Ragusans and 13 foreigners from different countries).

During the Candian War (1645-1669) between Venice and Turkey, the diplomacy of Dubrovnik saved the independence of the Republic, but in 1684 the Republic concluded a treaty through the payment of a fee for military protection by the Austrian emperor, following the difficulties derived from the tremendous

earthquake of 1667; the heavy reconstruction was difficult and the recovery of the sea trade was based on the great quality of the ships'-captains (Ragusan citizens with a master's certificate issued by the Republic's authorities) and the fame of the well-constructed galleons<sup>10</sup>. But the earthquake "was a turning point [of the prosperity] and a point of crisis, separating the period of great prosperity in the second half of the sixteenth century from this later..."<sup>11</sup>.

To understand better the nature of the 1377 A.D. quarantine edict, we need to focus our attention on the organization of the Ragusan consulates in the 14th-16th centuries. The consuls were appointed by the Senate, without term, with decrees which stated the limits of the office, taxes, revenues, records of disputes on board; their reports were collected by the Maritime Office in Dubrovnik and preserved in the Archive of the Republic (the documents have been extensively studied by Ilija Mitic<sup>12</sup>): the Maritime rule (*Regolamento della Repubblica di Ragusa per la Navigazione Nazionale*) largely concerned the activities of the consular services and the rules for the conduct of the captains and of the ships' scribes. Many rules are devoted to assure a high standard of commerce and the fame of the Ragusan maritime trade network<sup>13</sup>:

*a) general dispositions*

Art. 1- Only a Ragusan subject could have the privileges (master's certificate, navigational certificate) of the national flag, along with other valid documents. If the ship was purchased outside Ragusan jurisdiction, a certificate of the National consul was required.

Art. 10, II - Before sailing for destinations beyond the Adriatic sea, captains and shipowners had to report to the Maritime Office and leave the crew list; they also had to embark a homeless unskilled boy from the City.

Art. 40 - The scribe on board had to be a Ragusan citizen.

*b) reputation*

Art. 47 - Captains and owners were asked to pay attention to their reputation in foreign ports and refrain from wearing excessive expensive apparel.

*c) record of goods, fees, etc. and of controverties*

Art. 14 - The ship's scribe was to be present at all transactions concluded by the captain and shipowner, e.g. signing of contracts, payment of anchorage fees, payment of consular fees, acquisitions and sales, purchase of marine equipment, ship repairs, receipt of money, etc.

Art. 17 - The scribe was to keep an orderly log book and report to the Maritime Office and the co-owners. In case of controversies with the captain, the scribe was to protest and report to the consul and the Maritime Office.

Art. 44 - The ship's scribe had to keep a daily record of all the ship's outlays and receipts, as well as the contracts. All the entries had to be recorded and signed by the consul. The consuls were not entitled to any fees for such certificates and signatures, and the captains were not allowed to remunerate them, under threat of penalty.

*d) penalties*

Art. 39 - In order to eliminate any possible fraud regarding cargo, captains and owners were reminded of the jail penalty of one to three years.

It is clear that the Regolamento's aim is to ensure the quality and the reputation of the commerce carried on by the Ragusan ships. This fact should be remembered on analyzing the first official act regarding the institution of quarantine.

*Medical activities and quarantine in Dubrovnik*

In the golden age of Ragusa, between the 14th and the 17th centuries the fame of the Republic of Dubrovnik for its urbanization (well constructed buildings, water supply, etc.) was very high, so that the Ragusan Senate was requested by Bosnian cities, e.g. Sarajevo, at the beginning of the 16th century, to send masons and master craftsmen (*magistrii cognere*) to build public baths (*hamam*) and an aqueduct with a water-supply system for the city<sup>14</sup>. In the same way the city of Dubrovnik provided physicians and drugs to Sarajevo and Doctor Mattia was

sent in the Summer 1513 to the Bosnian pasha Sanjak-Bey Junuz-Aga<sup>15</sup>: his success was so great that he opened also a pharmacy in Sarajevo, beginning in this way an exchange of physicians and drugs with the Bosnian cities. Again the Ragusan physicians reactivated the Roman thermal baths in those cities and since the healing properties of spas and baths were recognized, also in Dubrovnik and in the other Dalmatian cities "Bosnian waters" (*Aque di Bosnia*) were prescribed with exemption from duties if prescribed by Ragusan physicians<sup>16</sup>. On the other hand, great attention was paid by the Ragusans to medicine and pharmacy. This is testified by a sculpture which also today may be found in the first capitol of the *loggia* of the Rector's palace. The physician-Aesculapius and an alchemic shop are sculpted (Fig. 3) together with the inscription in a nearby wall celebrating Hippocratic medicine in Dubrovnik, recalling the ancient roots of the city as Epidaurus<sup>17</sup>.



Fig. 3. Aesculapius and a pharmacy sculptured on a capitol of the loggia of the Rector's palace, Dubrovnik.

Actually, the attention of the city to medical activities may be recognized since the 13th century. In fact, official documents about the medical tradition in the Ragusan territory date almost from the late 13th-14th centuries: the notarial registers of Ragusa (today kept in the Historical Archives-HAD of the *Palazzo Sponza*, the ancient customs building) quote physicians who served the city; the first record is about master *Johannes* coming from Treviso (1279). Traces of recruitments of doctors made by agents of the Republic may also be found, e.g. recruitments of a *medicus plagarum* (wound surgeon) in 1301 Venice (*Monumenta Ragusina*, v 71-72), of the masters *Albertinus* and *Bonaventura* from Venice (1323-1324, MR 90, 111), etc. An order of the Small Council of 1345 (just before the spreading of the *Black Death*, in the year 1347) was aimed at the recruitment of qualified physicians in Venice, Padua and Bologna and a rule approved during the plague year (1348) gave orders to search for doctors anywhere [MR, II.46]. A decision adopted in 1324 by the Senate *permitted* a Jewish physician to practise in Dubrovnik<sup>18</sup>; a few years later *Magister Benedictus physicus olim Judeus* was appointed as official physician of the Republic from 1354 to 1357 and he is considered the first of the Jewish physicians who practised<sup>19</sup> in Dubrovnik (in the city a Synagogue was established in the 14th century, i.e. a century before a Sephardic community was established after the Spanish Royal decree of 1492, which banned all Jews and Moors from Spain). We have above recalled that Jews were largely recognized as trade agents (*sensali*) in the second half of the 16th century<sup>20</sup>, often referred to also as consuls (*consuli*) as representatives of a group of merchants<sup>21</sup>. Again, a *medicus cerusicus* coming in 1376 from Pavia (*Johannes Aldoardis*) negotiated a salary of 200 gold ducats (AED, *Diversae Cancellariae* 24, 167v). A more complete description of the public physicians was made by Mirko D. Grmek<sup>22</sup>.

It is generally assumed that a public health policy is a result of many elements:

- a. the existence of a public interest to be protected;
- b. the general awareness that the interest may/should be protected;



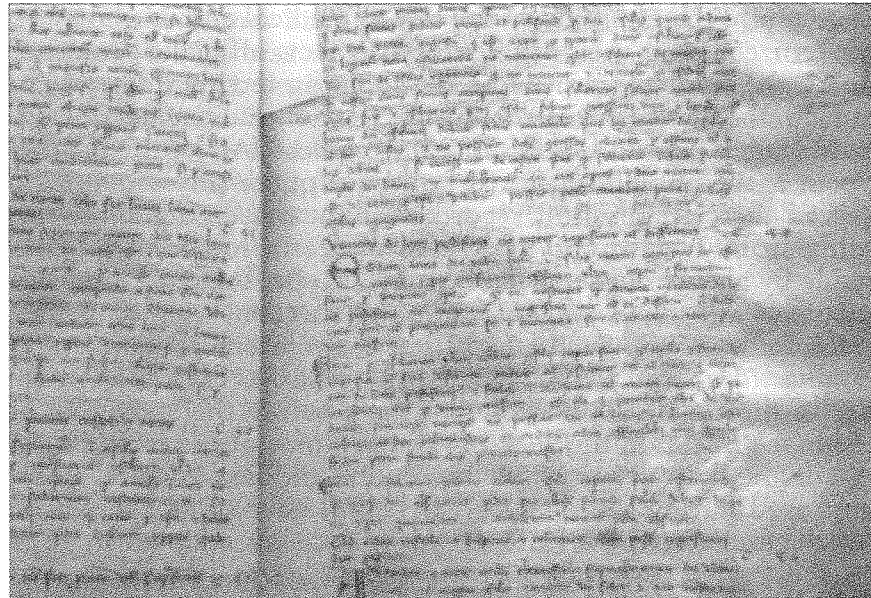


Fig. 4. Decree No. 49/1377 of Ragusan Rector, which issued quarantining (conserved in the Historical Archives of Dubrovnik, Sponsa Palace).

c. the existence of a civic and social organization capable to organize the protection of the interest.

Considering these elements it is not surprising that the first quarantine was officially declared by the Ragusan Senate (with the decree No. 49, 1377 A.D., the original copy today preserved in the Historical Archives of Dubrovnik - fig. 4).

To explain the main significance of the quarantine as issued by the Republic of Dubrovnik, we need to summarize several elements that characterized the life and the interests of the city in the 14th century and in the following centuries:

- i. the good cultural standards (to be part of the Senate, a high level of instruction had to be certified);
- ii. the presence of renowned physicians sought in the Italian medical schools and of a medical tradition recalling Hippocrates;
- iii. the attention to a concept of life, today called "hygiene" (ra-

tional urbanization, water supply, etc.: the standards for safe housing and fire protection were approved by the Ragusan Senate and codified in the 1272 in the *liber Statutorum*);

- iv. the great attention to commerce and the quality of the Ragusan commercial network, with an "added value" for goods, because transported by the Ragusan ships;
- v. the large network of ports in which Ragusan ships had the fame of qualified and honest shippers.

It should be remembered again that, following the *Reformationes*, the Ragusan Great Council, the elective Senate and the Government-Small Council were controlled by the merchant ari-

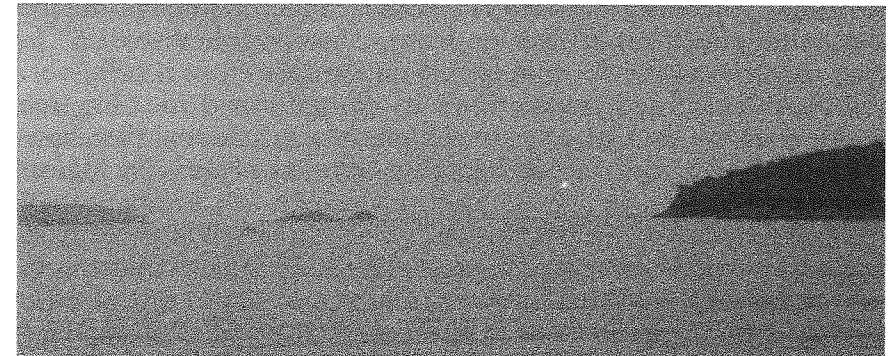


Fig. 5. The islands of Mrkan and Bobara, chosen for quarantining.

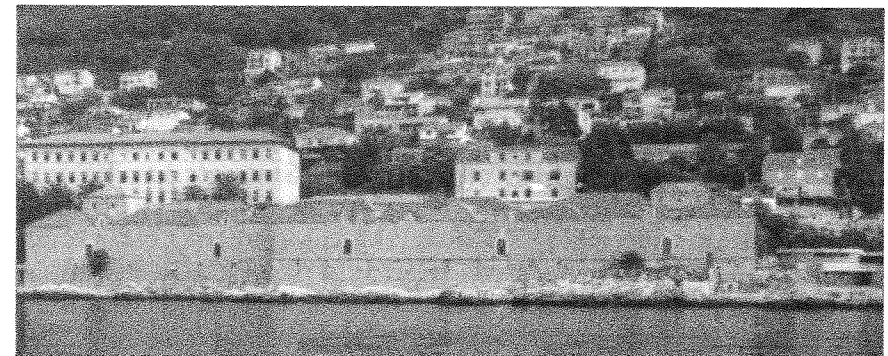


Fig. 6. The caravansary, outside the city of Ragusa-Dubrovnik, in front of the port (the caravansary was rebuilt in the 17th century).



stocracy. Thus, when pestilences and other [infectious] diseases were spreading in the Mediterranean ports and countries, the Senate of Dubrovnik stated that any ship or caravan coming to the city should stop for 4 weeks in the islands of Mrkan and Bobara (in front of the old city of Epidaurus, today called Cavtat - fig. 5) or in the caravansary built in front of the port, just outside the modern city (fig. 6). In this building it was possible to observe and "treat" simultaneously as many as 8-12 caravans by using the fumigation of the merchandise, a sort of "purification" technique that guaranteed the quality of the merchandise (i.e. pestilence-free goods). In the caravanserai the rooms were fumigated following the ancient tradition of "purifying fire" by using also sharp-smelling substances<sup>23</sup>, which rendered perceptible the desired effect of purification from transmissible diseases<sup>24</sup>. In fact the change of the concept of quarantine from a religious-purification context (prescribed by sacred texts) to a lay one (controlled by civil laws) requires many acquisitions, that have been analyzed from an anthropological point of view by Mafart and Perret<sup>25</sup>:

- i. the *personification of epidemics*, which may nevertheless conserve superstitious implications;
- ii. a *scientific advancement* in both medicine and civil engineering-city planning (i.e. the scientific acquisition that a disease may be avoided<sup>26</sup>; the public belief of the need of worthwhile physicians; the scientific project of structures for isolation);
- iii. the existence of a *social organization*, that would be interested in and capable of providing the necessary infrastructures for isolation (i.e. both caravanserais and islands for convoys either by land or by sea);
- iv. the *general interest* (of the city-Republic-State etc.) to legislate on this matter (i.e. to enforce the role of the public officials competent for control).

As suggested by McNeill it is conceivable that the new legislation was also the result of the experience acquired by physicians during the plague (i.e. the great plague or Black Death of 1348)<sup>27</sup>. It is however worth noting that there is a chronological

gap between many of the new measures of public hygiene and the original appearance of the plague<sup>28</sup>. On the contrary, the current opinion in the 14th century was that the plague was due to the corrupted-miasmatic air, which was able to corrupt the humors of the body. Thus, the stay in a well-aired and separate land (such as an island) or in a closed room, where the goods that have absorbed the miasmatic air (wools and materials were suspected) were fumigated, was supposed to help the control of the noxious effects of the "deadly" merchandise. Quarantining in airy islands or in well-ventilated/fumigated rooms seemed to be useful to guarantee that the goods were pestilence-free or good-quality products. Some evidence seems to indicate a role of wool-merchandise in the diffusion of the plague: in fact, a current opinion protracted until the 16th-17th centuries was that the disease was frequently developed in servants assigned to open the bales of wool (containing fleas)<sup>29</sup> and it is conceivable that this observation was previously made, may be in the 14th century<sup>30</sup>. Anyway, the decree No. 49/1377 of the Rector about the quarantine was issued as a general law for merchants arriving either by sea or by land; the decree was registered in the official book as issued quarantining, for the first time in the world; the original decree is now preserved in the Historical Archives of Dubrovnik (fig. 4). Later on, other local laws were issued in Italy (Milan, Forlì, Perugia and Udine, 1424; Venice 1426; Mantua, 1428)<sup>31</sup>. Before that period single dispositions may be found against the spreading of contagion: this is the case of the decree of 1374 issued by Ludovico Gonzaga in Mantua, which stated that any Mantuan citizen coming from countries with plague was forbidden to return to Mantua, under the penalty of death and "*citizens are obliged to denounce violators to the vicars. Furthermore, no one living in Mantuan territory may receive or lodge any person coming from a territory where the epidemic rages, under penalty of death for so violating...*"<sup>32</sup>. These Mantuan rules should be seen as a reviewed legislation which occurred in Italian cities after the disaster occurred with ships-imported pestilence in Messina on October 1347: new health boards, prohibition of the entrance into the city to anyone coming from infected cities, new powers

for the sanitary officials (*podestà* and *capitano*) were directed towards the establishment of a *sanitary cordon*, with the sole purpose of containing the spread of the disease without its own territory<sup>33</sup>.

We have documented the peculiarity of Dubrovnik-Ragusa: the prosperity of the small Republic-city was linked to commerce (we have documented the Ragusan wide trade-network in Europe), there was a great attention to medicine (demonstrated by the recruitment of physicians from the Italian universities), there was an excellent educational level (the young were admitted to the State Councils only if they had studied). Combining these elements and interests, the Republic issued not only dispositions for a *sanitary cordon* (as in Italian cities), but also an official rule for quarantining. The rule was directed not only to *suppress* the chances for the diffusion of a deadly disease by issuing prohibition or penalties for people coming from infected lands, but also to *allow* the *normal civic life* (particularly commercial activities). Ragusans' *positive* (and not only defensive) *attitude* to life led to the superiority of the small Republic of Ragusa-Dubrovnik and the basis for its prosperity in the next centuries. We may discuss again if the Ragusan law on quarantine originated from a new aetiopathogenetic perspective, but that would be a mere "*retrospective exercise*", because we do not yet have any evidence. According to this appraisal, we may emphasise that in other countries there is evidence that also in the following century the pestilence was related to the miasmatic air or to the influence of conjunction of stars or to the change of seasons or winds<sup>34</sup>.

Finally, it should be noted that the considerable importance of the Republic-town as a center of the Ragusan organization was evident when the 1677 great earthquake destroyed the city. A rapid reconstruction was made and *normal civic* life was soon restored.

We have analyzed the "*nature*" of the city (educational level, attitude to travel, high value of medicine, cosmopolitanism, attention to public interests, etc.) not only to better understand the quarantining-issue, but also to see Giorgio Baglivi - the great Ragusan-Italian physician - as "*product*" of his time and native-city, because his success is a combination of personal attitude

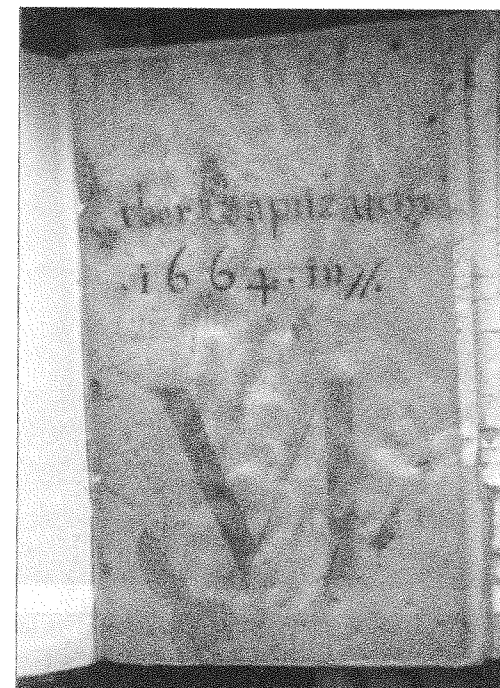


Fig. 7. The *liber baptizatorum* of the parish of Dubrovnik, where on the day 16 is recorded the birth certificate of George Armenius on September 8, 1668 (a. title page; b. text).

and commitment, environmental factors and an ability to grasp opportunities. Giorgio Baglivi, born in Ragusa-Dubrovnik as George Armenius<sup>35</sup> (fig. 7 a-b), orphan when he was two years old, a student in the Jesuits' College at Dubrovnik, then adopted as an adolescent by the Baglivi family of Lecce<sup>36</sup>, a student in the Medical Schools of Naples and Salerno, then a physician well trained in the best Italian Medical Schools, finally a teacher in the Sapienza Archigymnasium of Rome. The practical lay character and cosmopolitanism of his native-city is evidenced by either the analysis of the edict on quarantining, which can be interpreted as a practical system to protect the interests of the Republic in a rational manner, revealing the importance assigned to "*international*" trade, or by the considerations of the

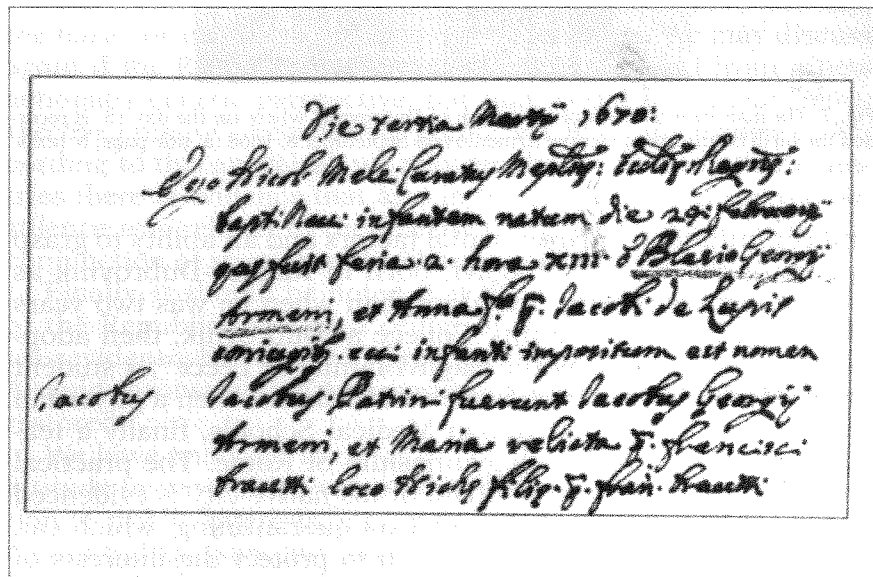
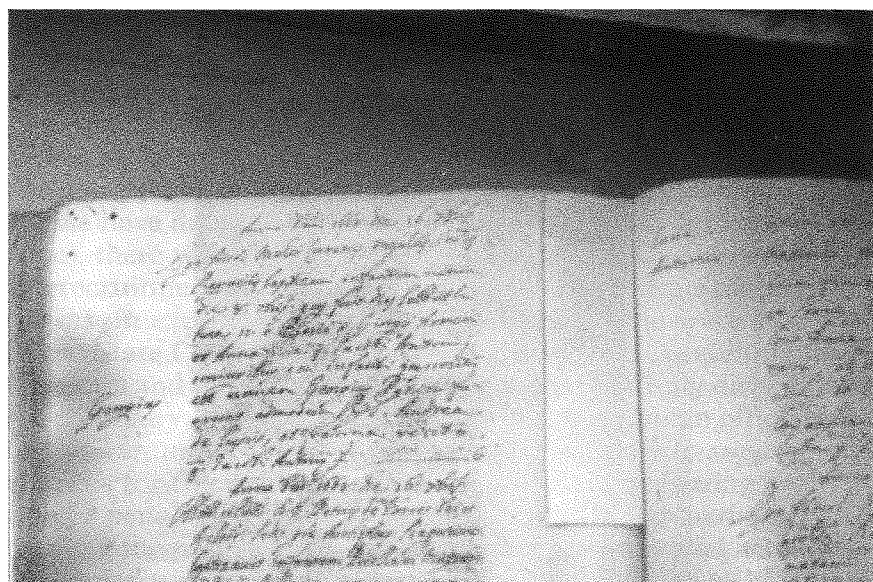


Fig. 7c. The liber baptizatorum of the parish of Dubrovnik, recording the birth certificate of Jacobus Armenius on March, 3, 1670.



Fig. 8. The Historical Archives of Dubrovnik, Exhibition Room, Sponza Palace, Dubrovnik Sept. 8, 1999.

role of medical knowledge and of the education of the youngs: the practical *lay* character and *cosmopolitanism* gave rise to the peculiarity of the attitude of Baglivi towards science, e.g. the *experimentalism* as support to medical knowledge. Both the humanistic education and *practical approach* to life can be looked on as the spirit of the city which characterized first the education (in the Jesuits' school-College at Dubrovnik), and later the fortune in the Italian and European medical schools of the scientific thought of the Ragusan George Armenius-Giorgio Baglivi<sup>37</sup>.

REFERENCES AND NOTES

Abbreviations: HAD=Historical Archives of Dubrovnik

1. ZIEGLER Ph., *The black death*. Harper & Row Publishers, New York, 1969, pp. 15-16.
2. DI PIAZZA M., *Michaelis Platiensis Historia Sicula ab anno 1337 ad annum 1361*. He describes the pestis which was developed in Messina following the docking of twelve



- Venetian galleys on the first days of October: "... quod propter infectionem hanelitus inter eos mixti universaliter alloquentes, adeo unus alterum inficiebat quod totus dolore concussus videbatur et quodammodo conquassatus..."; VILLANI G., *Istoriae florentine*. Dragomanni, Florence, 1845, quoted also by CORRADI A., *Annali delle epidemie occorse in Italia dalle prime memorie fino al 1850*. Bologna, 1865-1894, vol. I, p. 190, ...*Otto galee genovesi, ch'erano iti nel Mare maggiore, morendo la maggior parte, non ne tornarono più che quattro galee [three galleys] piene d'infermi, morendo al continuo. E quelli che giunsero a Genova, tutti quasi morirono e corruperro sì l'aria, dove arrivavano, che chiunque si trovava con loro, poco appresso morivano...*; p. 194, ...*La peste ch'era in Genova fin dal Novembre penetrava in Pisa al nuovo anno; in Febbraio aveva messo piede come già è stato detto, in Lucca, ed in Marzo aveva invaso Firenze, gran parte della Toscana, Bologna, Modena, Venezia; in Aprile da Piombino giungeva Siena ed in Perugia; in Maggio vedevanla Ancona, Orvieto, Rimini ed il mese appresso Faenza e Cesena.*
3. McNEILL W. H., *Plagues and Peoples*. Anchor Press, New York, 1976, ch. 4, notes 35-37; the ch. 3 explains the Mongolian caravan commerce and the origin of the black death in the 14th century. See also: CASSAR P., *Medical History of Malta*. London, 1964, pp. 175-190, about the dispositions on quarantines by the public Authorities.
  4. AMARI M., and SCHIAPPARELLI C., *L'Italia descritta nel "Libro del Re Ruggero" compilato da Idrisi*. Roma, 1883 (Arabic text on p.70, Italian translation on p. 84); SISIC F., *History of Croats during the rule of the Arpad Dynasty*. Zagreb, 1944, pp. 5-47.
  5. KOVACEVIC-KOJIC D., *Urban settlements of the Bosnian Medieval State*. Sarajevo, 1978, pp. 160-162.
  6. IMAMOVIC M., *Bosnia and Dubrovnik: a historical review*. In: BERKOVIC S. (ed), *Diplomacy of the Republic of Dubrovnik*. Diplomatic Academy, Zagreb, 1998, pp. 105-117.
  7. IMAMOVIC M., *Slave regulations in the Ragusan Statute of 1272*. In: IMAMOVIC M. (ed.), *Zbornik radova iz pravne istorije posvecen Albertu Vajsu*. Belgrade, 1966, pp. 111-121. The Author says that after 1465, Ragusan records mention special people who hunted slaves, the slavers (*raptores hominum*), who operated in the immediate hinterland of Dubrovnik.
  8. KRESEVLJAKOVIC H., *Caravanserals in Bosnia and Herzegovina*. Sarajevo, 1957, p. 11; IMAMOVIC M., cf. note 6, p. 115.
  9. KRIZMAN M., and KOLANOVIC J., *The Statute of the City of Dubrovnik 1272*. Historical Archives of Dubrovnik, Dubrovnik, 1990.
  10. KISIC A., *The roles of Ragusan Consulates in the maritime and trade activities of the Dubrovnik Republic*. In: BERKOVIC S. (ed.), *Diplomacy of the Republic of Dubrovnik*. Diplomatic Academy, Zagreb, 1998, pp. 343-354.
  11. KISIC A., cf. note 10, p. 346.
  12. MITIC I., *Consulates and Consular Services in old Dubrovnik*. Historical Archives of Dubrovnik, Dubrovnik, 1973.
  13. The *Regolamento* is reported in the updated form of 1745, as conserved in the Historical Archives of Dubrovnik and commented by Anica Kisic, cf. note 10, pp. 352-354.
  14. Historical Archive of Dubrovnik, Ragusan Senate's Acts, decision of May 11, 1509; see the comment by TRUHELKA C., *Turco-Slav documents in the Ragusan Archives*. Sarajevo, 1911, p. 201.
  15. SKARIC V., *Sarajevo and its environs from the oldest times to Austro-Hungarian occupation*. Sarajevo, 1930, p. 47.
  16. IMAMOVIC M., cf. note 6, p.114.
  17. This is a historical falsification, because Aesculapius in the Greek mythology was not born in Epidaurus; again, no relationships have been found between the Greek and the Dalmatian Epidaurus. The Palace of Rector, formerly Duke's Palace before the Arsenal fire of 1435, has a large porch enriched in the capitols with sculptures explaining im-

- portant views of the citizens. The southern half-capitol represents the seated god Aesculapius working in a medieval alchemic laboratory.
18. Historical Archives of Dubrovnik, *Diversae Cancellariae* 21, pp. 71-72.
  19. Historical Archives of Dubrovnik, *Diversae Cancellariae* 18, p. 13.
  20. Historical Archives of Dubrovnik, *Consolati 1572-1575*.
  21. BURDELEZ I., *Il ruolo degli Ebrei nel commercio marittimo di Ragusa*. Studi Livornesi 1988; 3 (ed. Bastogi, Livorno).
  22. GRMEK M. D., *Le médecins communaux de Raguse (Dubrovnik) au Moyen Age*. Gesnerus 1995; 52: 7-19. Grmek lists the physicians recorded in the *Monumenta Ragusina*, or in the *Diversae Cancellariae*: they are *medicus plagarum* (surgeons) or physicians (in less large number) or (*medicinae professor*, only few), coming from Italy, but also from France or Spain. Christophorus Beneventanus was the physician in charge from 1360 to 1399 and he was the public physician when quarantining was officially issued by the Republic of Ragusa in 1377. See also STUARD S.M., *A Communal Program of Medical Care: Medieval Ragusa/Dubrovnik*. J. Hist. Med. and allied Sciences 1973; 28: 126-142; BERNABEO R., *Master Giacomo Gondoaldo of Ferrara, salaried physician of the Republic of Ragusa* Arcisp S. Anna (Ferrara) 1969; 22: 1001-1034; KIBRE A., *Dominicus de Ragusa, Bolognese doctor of arts and medicine*. Bull. Hist. Med. 1971; 45: 383-386. Grmek has also refuted the belief that in Marseille has been issued first a forty-day quarantine in 1383 (documents are not original), whereas it is now clear that the priority of Venice in official quarantining is a personal opinion of George Sticker not supported by official acts. On this matter; see GRMEK M. D., *Le concept d'infection dans l'antiquité et au Moyen Age, les anciens mesures sociales contre le maladies contagieuses et la fondation de la première quarantaine à Dubrovnik*. RAD Jugoslavenske Akademije i Umjetnosti (Zagreb) 1980; 384: 28-32 and CARMICHAEL A.G., *Plague legislation in the Italian Renaissance*. Bull. Hist. Med. 1983; 57: 508-525, p. 511 and notes 13-14.
  23. Euripides, *Helena* 869, *Hercules Furens* 937, *Iphigenia Aulidensis* 1112 and 1471; about the use of fire and fumigation for purification see also the comment of PARKER R., *Miasma* (ch. vii, *Disease, Bewitchment, and Purifiers*). Oxford Press, Oxford 1983.
  24. PARKER R., cf. note 23, p. 227 and note 113 (quotation of Vegetius, *Mulomedicina* 3.12.1: *Penetrat ad viscerum omnes recessus, ac curat saepius loca, quae potiones non poterant curare...*).
  25. MAFART B., PERRET J.L., *History of the concept of quarantine*. Med Trop [Marseille] 1998; 58 suppl. 2: 14-20.
  26. McNEILL W. H., believes that "*theories of contagion were advanced to justify quarantine*", cf. note 3, p. 210; we have used the more cautious term "*avoid a disease*" (and not "*contact*" or "*contagious*"), because only with Girolamo FRACASTORO the germ theory of infections was clearly explained (*De contagione et contagiosis morbis et curatione*. Venetiis, apud heredes L. Iuntae, 1546); but the work of Fracastoro was about two centuries later the Black Death appearance...!
  27. McNEILL W.H., cf. note 3, pp. 210-211: the opinion of Mc Neill is not supported by documents (from Archives or other).
  28. CARMICHAEL A.G., *Plague legislation in the Italian Renaissance*. Bull. Hist. Med. 1983; 57: 508-525.
  29. ERHARD J., *Opinions médicales en France au XVIIIe siècle: la peste et l'idée du contagion*. Annales ESC 1957; 12: 46-59.
  30. The first recognizing of *animaculae* in putrefying material from the pustules was made by using a microscope only two centuries after the Black Death by Athanasius Kircher (KIRCHER A., *Scutinium physico-medicum contagiosae luis, quae pestis dicitur*. Romae, typ. Mascardi, 1658). Kircher stated a theory of contagion by *animaculae* as the cause of the infectious disease. Only descriptions (not etiopathogenetic interpretation)



- of the plagues and miasmas are in the works of Valescus de Taranta (*Tractatus de epidemia et peste*. Martin Flach, Basel, 1474), of Heinrich Steinhöwel (*Buchlein der Ordnung der Pestilenz*. Johann Zainer, Ulm, 1473), of Ysbrand Van Diemerbroeck (*De peste libri quatuor...*, ex off. J. Jacobi, Arenaci, 1646).
31. Mantova, State Archives, Archivio Gonzaga, Cride, busta 2038, fasc. 1, fol. 5.
  32. Mantova, State Archives, Archivio Gonzaga, Cride, busta 2038; reported also by CAR-MICHAEL A.G., cf. note 28, p. 512.
  33. Sanitary cordons, sanitary commissions, "Magistrati di sanità" etc. were directed to control the spreading of the disease into the territory: see CIPOLLA C. M., *Public Health and the Medical Profession in the Renaissance*. Cambridge University Press, Cambridge-New York, 1976, pp. 1-31. During the 1476-1479 pestilence in Rome, many physicians discussed the aetiology of the deadly disease, which was connected with the weather, the winds, the influence of the planets, etc: *Dà medici di Roma fu disputato intorno alla natura della corrente epidemia: l'archiatra Evangelisti la voleva conseguenza delle passate piovosissime stagioni; Giacomi dé Zoccoli credeva che congiuntamente all'umidità avessero operato le influenze della cometa e dell'eclissi stato immanzi; maestro Enestore v'aggiungeva l'opera de' venti, e Jacopo Siculo quella de' pianeti e delle loro posizioni*. CORRADI A., *Annali delle epidemie occorse in Italia dalle prime memorie fino al 1850*. Bologna, 1865-1894, vol. I, p. 312.
  34. Historical Archives of Dubrovnik, *Liber baptizatorum 1664-1671*, fol. 148v: *Anno Domini 1668, die 16. 7-bris [septembris]. Ego Nicoalus Melei curatus Metropolitanae Ecclesiae Ragusinae baptizavi infantem natum die 8 7-bris, quae fuit dies Sabbathi, hora 12, e Blasio Georgii Armeni et Anna filia qn: Jacobi Antonii, coniugibus, cui infanti impositum est nomen Georgius. Patrini fuerunt admodum Rev. Andrea de Lupis et Franna relicta qn. Jacobi Antonii*.
  35. Raffaele Tudisi (1645-1732), rector of the Jesuit's College of Dubrovnik and Michele Mondegai (1649-1716), teacher of philosophy in the Jesuit College of Lecce, organized on 1682 the adoption of the brothers George (Giorgio) and James (Giacomo) Armenius by the doctor Pietro Angelo Baglivi (1624-1704). The official act of adoption was made by the notary Francesco Antonio Piccinni on march 5, 1687, followed by the Royal Permission, Naples, january 22, 1688. See the collection of letters from/to George Baglivi, e.g. from Dubrovnik by Raffaele Tudisi, july 7 and sept. 22, 1697: i. Osler Collection, Osler Library of History of Medicine, McIntyre Medical Sciences Building, McGill University, Montreal; ii. Waller Collection, Universitetsbibliotek, Uppsala; iii. Fondo Magliabechi, Biblioteca Nazionale Firenze; see also DI TROCCHIO F., GUERRIERI G., and DE SIMONE E. (eds.), *Carteggi di Giorgio Baglivi. Fondi Osler e Magliabechi*. Milella, Lecce, 1999; TOSCANO A. (ed), *Giorgio Baglivi. Carteggio (1679-1704). Conservato nella Waller Collection presso la University Library <Carolina Rediviva> di Uppsala*. Leo S. Olschki, Firenze, 1999.
  36. GRMEK M. D., *Osservazioni sulla vita, opera ed importanza storica di Giorgio Baglivi*. Atti XIV Congresso Internazionale di Storia della Medicina, Roma-Salerno, 1954, pp. 423-435, p. 428: "... il Baglivi fu armeno, raguseo, leccese e romano... Ragusa gli diede la cultura umanistica e l'Italia gli diede ... l'arte medica, le possibilità di un lavoro fruttuoso... i maestri e i discepoli. Roma gli diede la celebrità". This paper describes the close relationships of George Armenius-Baglivi with his native city until his death: Grmek quotes that on june 10, 1705 - two years before the death - Baglivi sent a copy of his *Opera omnia* to the old benefactor, the Jesuit Raffaele Tudisi (1645-1732), living in Dubrovnik; the book has been found by M.D. Grmek in the Scientific Library of Dubrovnik, with the dedication and the signature as "*Georgius Armenius Baglivus*"; again, Baglivi disposed his properties to the Ragusan Glianani family by an official will.

A Acknowledgments. I thank the Historical Archives of the city of Dubrovnik for the kindness and help in the research of the original documents quoted in this paper. This work is dedicated to the memory of Professor Mirko D. Grmek and to his stimulating discussions and suggestions on the relationships between the practical purposes of political actions and the edicts issued by the governments, as in the case of the quarantining issued by the Republic of Ragusa.

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