

TRAJAN'S CANAL AT THE IRON GATE

By JAROSLAV ŠASEL

(Plate IX)

'Magnum est stare in Danubii ripa', wrote Pliny in his panegyric to Trajan. The significance of his words can only be appreciated by the sight of the Danube's gorges: Struden, Wachau, Devin, Esztergom, Iron Gate, either fairytale-like in their beauty or gloomy and menacing, through which the movements of European prehistory forced their way. The prestige of the great river can be felt in Augustus's proud words *protulique fines Illyrici ad r[ip]am fluminis Dan[u]i*.

Trajan spent the winter of 98 and the whole of 99 with the Moesian armies. He paid special attention to military discipline;¹ together with the army leaders he worked out careful plans for a preventive attack on the Dacians. Some of the measures he undertook, then and later, are in process of being recovered. Relevant items are: 1: The construction of the famous fortified bridge at the old fording-point at Kostol. 2: the mobilization on a war-footing of the military river flotilla. 3: the reorganization of military bases on the northern bank of the Danube. 4: the creation of an intelligence-espionage service. 5: co-ordination and organization of the troops to be used in the assault. 6: a large-scale building programme to provide accommodation for the invasion force and to increase the capacity of ports in the winter months. 7: the modernization and reconstruction of the towing-path along the river, especially the rock-cut sections in defiles.² 8: the engineering of navigable canals beside sections of the river with rapids.

The last-named measure has long been established by deduction; this was to some extent supported by analysis of Procopius's comments on Apollodorus's bridge.³ However, firm proof was first obtained in 1969, when a bulldozer ploughed up an inscribed marble slab (97 × 209 × 20 cm, height of letters 7.5-12 cm; 4 peg-holes on each lateral edge; Pl. IX) when digging for clay. The find-spot was 150 m south-east of the auxiliary fort situated near the present-day hamlet of Karataš, and lay near the eastern edge of the Roman cemetery.⁴ How it found its way to this spot is not clear. To-day it stands in front of the administration building of the hydro-electric power station Djerdap near the town of Kladovo.

The tablet has been published, with a scientific commentary by Petar Petrović.⁵ The text runs as follows:

*Imp(erator) Caesar divi Nervae f(ilius)
Nerva Traianus Aug(ustus) Germ(anicus)
pont(ifex) max(imus) trib(unicia) pot(estate) V p(ater) p(atriciae) co(n)-
sul) IIII*

¹ Pliny, *paneg.* 18, 1.

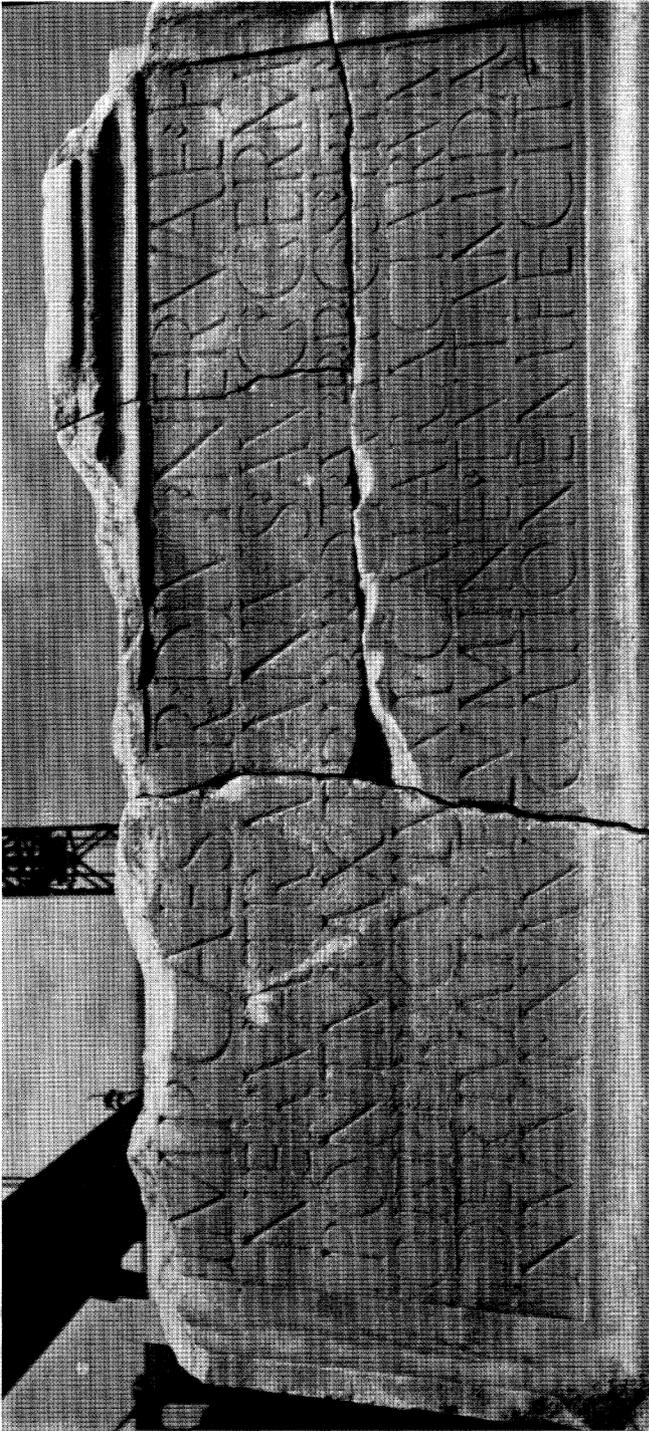
² For item (1), Dio 68, 13 and Procopius, *de aedif.* 4, 6, 13; for other sources, see J. Aschbach, 'Über Trajans steinerne Donaubrücke', *Mittheilungen der Zentralkommission* (Vienna) iii, 1858, 197-220, and D. Tudor, *Podurile romane de la Dunarea de jos* (1971), 53 f.; it was finished in 103/4, cf. *BMC* iii, no. 847 (also H. Mattingly, *ibid.* p. ci). On item (4), cf. M. Speidel, *JRS* lx, 1970, 148. On item (5), cf. R. Hanslik, *RE* Suppl. x, 1059 and J. Beneš, 'Die römischen Auxiliarformationen im unteren Donaauraum', *Sborník prací Filosofické fakulty, brněnské university*, E-15 (1970), 159 ff. A valuable glimpse is furnished by the *pridianum* of *cohors I Hispanorum veterana* stationed at Stobi. The *pridianum* was dated to August, 99 by R. O. Fink, *JRS* xlviii (1958), 102 ff., but to 105 by R. Syme, *JRS* xlix (1959), 26 ff. (= *Danubian Papers* (Bucharest, 1971), 122 ff.); cf. J. F. Gilliam, *Hommages à Albert Grenier* (1962), 747 ff., and most recently to 100 by R. O. Fink, *Roman Military Records on Papyrus* (1971), 217 f. For item (6), cf. Procopius, *de aedif.* 4, 6, 6, (the forts of Kaputboes and Zanes), and *CIL* iii, 1642 (building-inscription from the fort at Prahovo);

cf. also the results of new excavations quoted by P. Petrović in *Archaeologia Jugoslavica* ix (1968), 88, p. 2 (forts at *Taliata*, Boljetin, Saldum, Gospodjin Vir, Cezava and so on, all in the Iron Gate). For item (7), cf. *ILJug.* 63 = Smallwood, *Documents Illustrating the Principates of Nerva, Trajan and Hadrian* no. 413.

³ Procopius, *de aedif.* 4, 6, 8 ff. cf. F. Kanitz, 'Römische Studien in Serbien', *Denkschriften, Akad. Wien* (Philos.-hist. Kl.) xlii (1892), 50. A. Mócsy, *Gesellschaft und Romanisation in der römischen Provinz Moesia superior* (1970), 116.

⁴ The auxiliary fort near Karataš measured 172 by 100 m. with semicircular towers, cf. F. Kanitz, *op. cit.* p. 49, fig. 31; 150 m. west of it was a civilian settlement, and on the eastern side an ancient cemetery; an aqueduct has also been discovered, cf. I. Janković in *Arheološki pregled* vi (1964), 53.

⁵ *Saopštenja* (Republički zavod za zaštitu spomenika kulture, Belgrade) viii (1969), 51 ff., with photo (this is noted by L. Rossi, *Trajan's Column and the Dacian Wars* (1971), 32); *Starinar* xxi (1970), 31 ff. with photo; *Archaeologia Jugoslavica* ix (1971), 83 ff. with drawing.



MARBLE INSCRIPTION RECORDING TRAJAN'S CANAL AT THE IRON GATE (see p. 80 f.)
Photograph by courtesy of the author. Copyright reserved

*ob periculum cataractarum
derivato flumine tutam Da-
nuvi navigationem fecit.*

Lines 1-3. The stone-mason—who was, to judge by the form of the letters not identical with one who carved the known *Tabula Traiana*⁶—reduced four lines of analogous text on the *Tabula* to three lines here and thus had to use more abbreviations. The inscription dates from the period between 1 January and 9 December 101 and was set up at the conclusion of the intensive preparations which marked the year of the general attack on Dacia. An interesting point is that the stonecutters who carved the Trajanic building inscription for the rock-cut tow-path (*ILJug* 63; Smallwood, *Documents* 413) also carved a dedication to Hercules in the cave below the road. This is to be published by Martin Gabričević in *Arheološki vestnik* xxiii (1972). The cutting of the cliff road or tow-path and the *Tabula Traiana* itself are depicted on Trajan's column, as L. Rossi has shown in *The Antiquaries Journal* xlviii (1968), 41 ff.

Line 4. Navigation was clearly being undertaken despite the considerable risk involved. The word *cataractae* or waterfalls does not completely suit the Danube rapids; the original meaning of the word has been blunted by constant use.

Line 5. *derivato*, the verb used, indicates that a new channel has been dug; this must be the canal whose embankments were still visible until recently.⁷ It began at the mouth of a tributary, the Kašajna; at the point of entry to the canal and designed to control it, a third-century *burgus* has been found which measures 31 by 29 m, and also a free-standing watch-tower.⁸ It then crossed the bed of the river Trstenica and that of the Kosovica; all three streams were regulated by flood-gates, to prevent alluvial deposits hindering use of the canal.⁹ At the exit of the canal, at the village of Sip, F. Kanitz¹⁰ observed traces of a fort. From here to the spot where the inscription was found, near the auxiliary fort in the hamlet of Karataš, the distance is 3.5 km. If we assume that the inscription has not been moved from its original position, then either there must have been a second canal there or the original canal must have extended as far as this spot (the modern extension is called the Mali Djerdap canal). Trajan, no doubt anxious to achieve the fullest preparations for the critical phase, ensured the protection of navigation and movement at the Iron Gate by every possible means, concentrating road and canals on the southern bank, and probably familiarising himself with their associated technical difficulties. He undoubtedly built at many more sites than those we know, and probably also built more canals. Procopius¹¹ speaks of one near the ruins of Trajan's bridge, which might have been already in use while the bridge was under construction and not merely after its destruction, as he believed. A second probably existed near the hamlet of Karataš—if this is the correct inference to draw from the inscription—and a third, as we have seen, was near the village of Sip; there is, too, every probability that the canal near Djevrin was also built at this time.¹²

All these constructions were carried out by technical units from the Moesian garrisons. As it happens, the question of the identity of their commander can also be answered. He was *C. Manlius Felix, praefectus fabrum imp(eratoris) Caesaris Nervae Trai(ani) Germ(anici) Dacici II*,¹³ whose service as *praefectus fabrum* on the emperor's staff falls in the years 100 to 101.¹⁴ Thus it was possibly he who planned

⁶ *ILJug* 63; Smallwood, *Documents* 413.

⁷ See F. Kanitz, 'Römische Studien in Serbien', cit. (above, n. 3) 50, fig. 32; new facts introduced by P. Petrović in *Starinar* xxi (1970), 33 f.

⁸ See P. Jovanović, *Arheološki pregled* vi (1964), 57; P. Milošević, ib. vii (1965), 102 and in *Stare kulture u Djerdapu* (Belgrade, 1969), 150; *TIR-Aquincum* (1968), 103.

⁹ P. Petrović, op. cit. 34 f.

¹⁰ op. cit. p. 51.

¹¹ *de aedif.* 4, 6, 8.

¹² For an inscription, now lost, which was found

there, see A. Cermanović-Kuzmanović in *Arheološki pregled* x (1968), 59; sulphur springs and Roman baths are also known, F. Kanitz, op. cit., 51.

¹³ *CIL* iii 726 = *ILS* 1419.

¹⁴ H.-G. Pflaum, *Les carrières procuratoriennes équestres* i (1960), 147, no. 64 with the arguments. B. Dobson, 'The *Praefectus Fabrum* in the Early Principate' in M. G. Jarrett and B. Dobson (eds.), *Britain and Rome* (1965), 75 f.; cf. E. Sander, 'Der praefectus fabrum und die Legionsfabriken', *Bonn. Jahrb.* clxii (1962), 139 f.

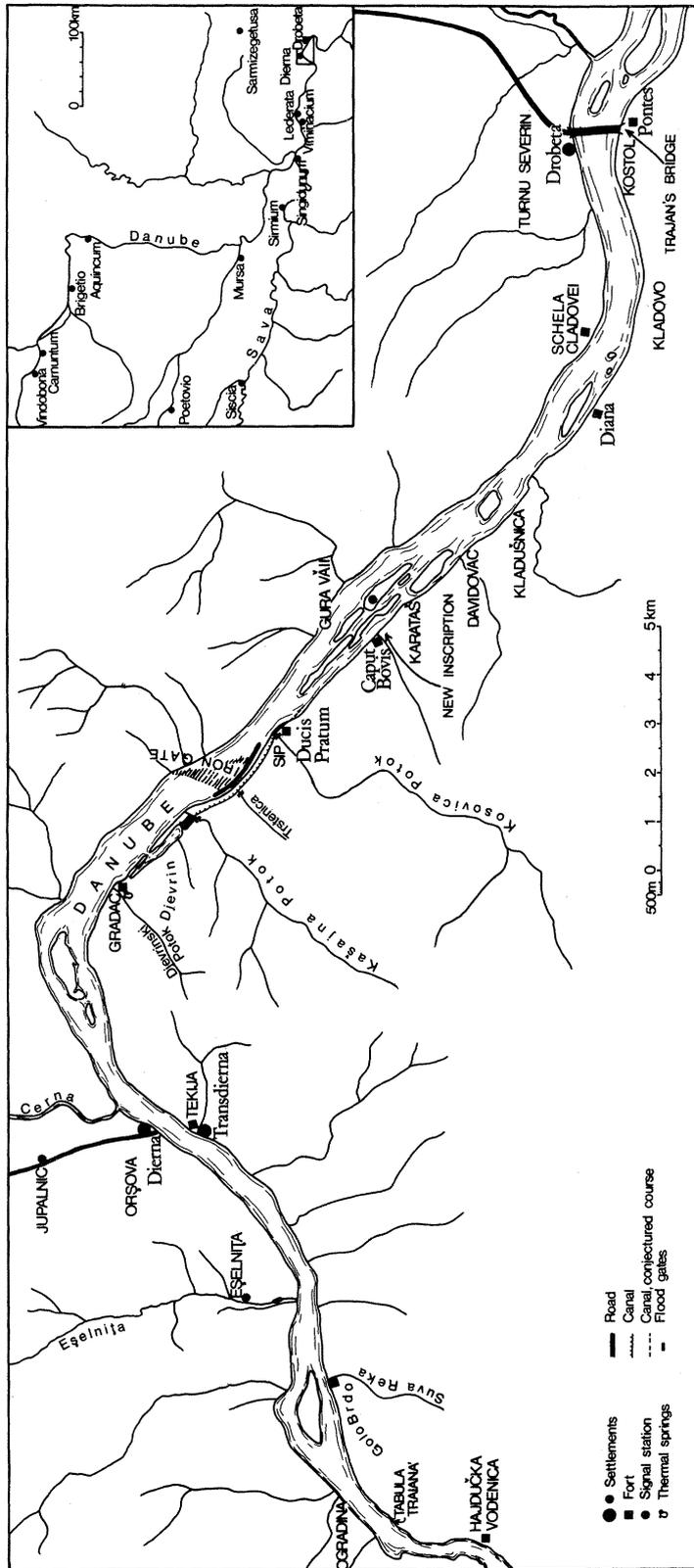


FIG. 6. MAP OF THE DANUBE RIVER IN THE NEIGHBOURHOOD OF THE IRON GATE
(Drawn by Roger Goodburn from an original supplied by the author)

the rock-cut tow-paths. His next post—quite naturally—was *praefectus class(ium) Pann(onicae) et Germ(anicae)*.

Those who executed his plans on the individual work-sites were army units, directed and advised by specialist technicians and *libratores*,¹⁵ extremely numerous and constantly in demand in the garrisons of both Moesias, where there were more than sufficient problems in connection with the regulation of river navigation. It is significant that ten years later, when Pliny was governor of Bithynia, Trajan received a request from Pliny for some *libratores*, and he immediately thought of those from Moesia. Pliny had turned to the emperor for help and the approval of his plan for the projected building of a navigable canal between the lake in *Nicomedensium finibus* and the sea, which would facilitate and reduce the cost of local transport. 'Superest', he concluded, 'ut tu libratores vel architectum, si tibi videbitur, mittas, qui diligenter exploret, sitne lacus altior mari, quem artifices regionis huius quadraginta cubitis altiorem esse contendunt.'¹⁶ The answer¹⁷ was in the affirmative: 'poteris a Calpurnio Macro petere libratores et ego hinc aliquem tibi peritum eius modi operum mittam.' At the time when Pliny was governor in Bithynia.¹⁸

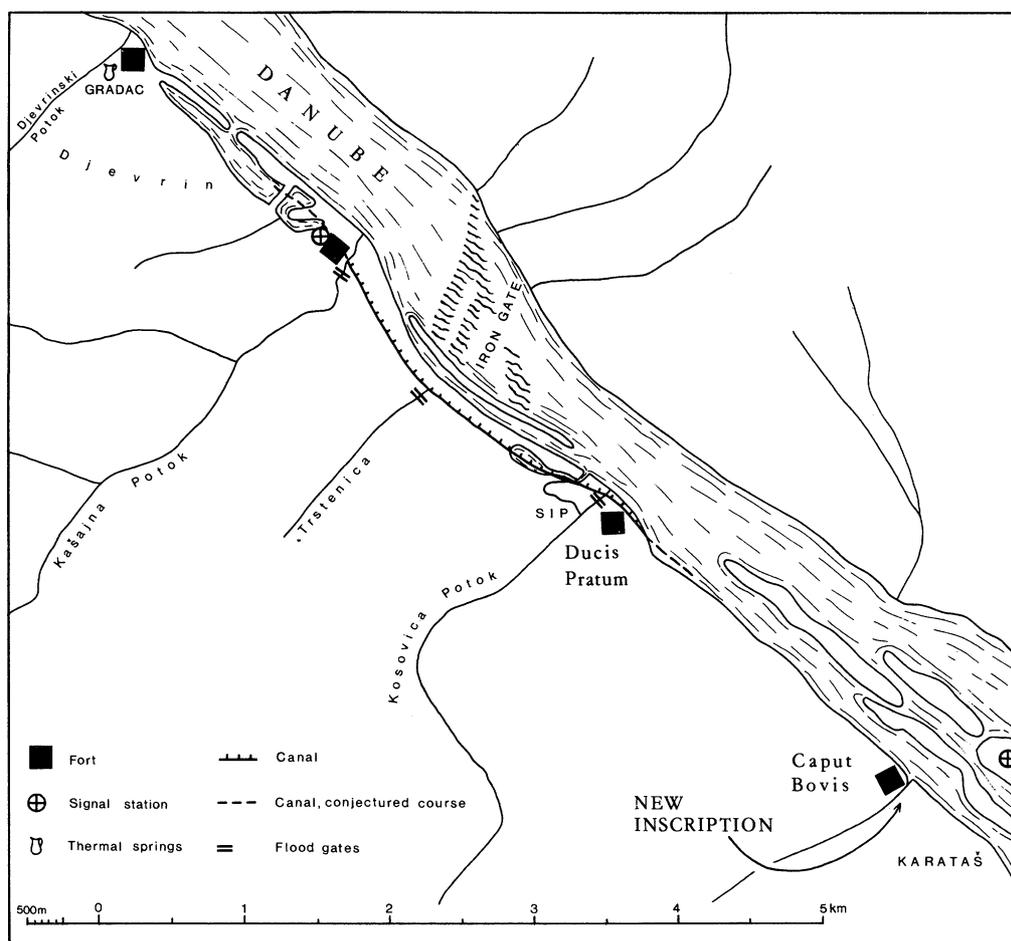


FIG. 7. THE IRON GATE: MAP SHOWING CANAL AND FINDSPOT OF NEW INSCRIPTION

(Drawn by Roger Goodburn from an original supplied by the author)

¹⁵ On these, see G. Oddone, *Diz. ep.* iv, 965. For instance, the rock-cut tow-path at the old Tabula Traiana was executed by *lapidarii* of both Moesian legions: see the new inscription dedicated to Hercules mentioned above in the commentary on lines 1-3, to be published in *Arheološki vestnik* xxiii (1972). For

lapidarii, see *Diz. epig.* iv, 385; *RE* xii, 774.

¹⁶ *ep.* 10, 41.

¹⁷ *ep.* 10, 42.

¹⁸ On the chronological problem, cf. L. Vidman, *Étude sur la correspondance de Pline le Jeune avec Trajan* (Prague 1960), 26.

C. Calpurnius Macer was *legatus Augusti pro praetore* in Moesia Inferior; Pliny was on good terms with Macer, as is seen from his letter 5, 18, and wrote to him as Trajan had suggested, in the meantime sending Trajan a more detailed report, in which he lists a number of technical details (10, 61). Trajan answered him in 10, 62, with a characteristic touch: 'Calpurnium Macrum credo facturum, ut te libratore instruat, neque provinciae istae his artificibus carent.'

So many fragments of facts begin to fit together, illustrating the course of, and vividly reconstructing, several simultaneously planned actions. The area we are concerned with is mentioned only by Procopius in the work *de aedificiis*. Here, after the description of Justinian's strategic fortifications in inner Illyricum, there follows a survey of the fortresses along the Danube in Dacia Ripensis, beginning with Singidunum (4, 5), then Viminacium and on to the fort of Ταυτόα¹⁹, followed by Ζέρνης, Δουκεπράτου, Καπούτβοες, Ζάνες, Πόντες. Of these, only the positions of the first and last have been identified: Ζέρνης is *Dierna*, now Tekija, and *Pontes* is the present-day Kostol.²⁰ But these two lie 22 km apart, and the three otherwise unknown forts—mentioned indeed only in this passage, but in geographical order—must be sought in this area. At the same time we know of three large ancient sites in the relevant area. In the face of this, the location suggested by M. Mirković becomes convincing and there is little possibility of serious mistake. On her identifications, Δουκεπράτου must be equated with Sip, Καπούτβοες with Karataš and Ζάνες with Kladovo (Davidovci).²¹ Procopius adds a postscript ὠνόμασται τοῦ Ῥωμαίων αὐτοκράτορος Τραιανοῦ ἔργον to his mention of the Καπούτβοες fort. Because of Trajan's intensive building activities, there must surely have been inscriptions set up on his orders along this sector (e.g. on the Danube bridge, by the canal, or at the fort) and Procopius or his source was probably quoting one of them here. Since this quotation stands immediately next to the place-name *Kaputboes*, we may perhaps directly associate it with the recently discovered text.

The new Trajanic inscription was discovered in the 'real' Djerdap (in Persian-Turkish *girdap* means 'gorge of whirlpools'), that is, in the 'Iron Gate', as it was known to the Latin and Teutonic west, at the end of the most dangerous part of the whole gorge,²² near the village of Sip and the hamlet of Karataš (Turkish name which means 'black wall') where, as already mentioned, the Roman fort of Καπούτβοες stood. For 3 km here the Danube plunges foaming, whirling, down into a narrow channel, over granite ridges and rocks, at a speed of 18 km per hour, and is further broken by two rapids at Prigrada and at Karataš. The hauling of heavily laden ships up-river was always impossible at this point because of the speed of the current, and its quick descent in level; and it still remained so after three canals, those of Djevrin, Sip and Mali Djerdap, were found to be necessary and were built in the first half of the nineteenth century. Yet even after these had been completed, heavier steam-vessels travelling up-river had to be hauled by locomotives. This gives significance to the name of the fort, Καπούτβοες=*Caput Bovis*: haulage by harnessed oxen evidently commenced here.

The Roman canal on the Danube was mentioned by a further ancient writer: this was the poet Caninius Rufus,²³ Pliny's fellow countryman, who was preparing a poem in Greek on the Dacian war. It is not known whether the poem ever got further than a rough draft, but its author evidently discussed it with his friend Pliny, who briefly summarized the *exordium*, and partly reproduces Caninius's own

¹⁹ 4, 6, 5, a slightly corrupt record of the name *Taliatea*, present-day Donji Milanovac, cf. also F. Barišić in *Vizantiški izvori za istoriju naroda Jugoslavije* i (1965), 68.

²⁰ V. Beševliev refers to these names *passim* from a philological point of view in his work *Zur Deutung der Kastellnamen in Prokops Werk 'De Aedificiis'* (1970); Ζάνες comes from abl. pl. *Dianis*, see *ibid.* p. 116. For the positions of both cf. M. Mirković, *Rimski gradovi na Dunavu u Gornjoj Meziji* (Belgrade, 1968), 111 f.

²¹ M. Mirković, *op. cit.* p. 112. P. Petrović in *Starinar* xxi (1970), 37.

²² The expression 'Iron Gate' is correctly applied only to that section of the Danube cliffs near Sip. After the Danube convention of 1948 it was extended by agreement to include a section of whirlpools and rapids 117 km long between Vinica and Kladovo on the Yugoslav bank or Moldava Veche and Turnu Severin on the Rumanian (that is between Danube kilometres 931 and 1048). Compare the extensive material provisionally presented by M. Paunović in *Djerdap i Timočka krajina* (Zagreb, 1970) and by R. Dragović, *Plovidba u Djerdapu* (Belgrade, 1965).

²³ *PIR*² C 394.

words,²⁴ 'dices immissa terris nova flumina, novos pontes fluminibus iniectos, insessa castris montium abrupta.' In a single phrase he captured all that archaeology has uncovered in the last hundred years between the Danube forts of *Lederata* and *Pontes*.²⁵

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²⁴ *ep.* 8, 4, 2.

²⁵ I am indebted to Professor S. S. Frere for help and suggestions in the preparation of this article.