

# Collaboration between Toros Toramanyan and Jurgis Baltrušaitis

MARIAM MANUKYAN

National Museum-Institute of Architecture after  
Alexander Tamanyan  
*mariammanukyank@gmail.com*

Based on archival materials, this paper discusses the collaboration between Armenian architect Toros Toramanyan and Lithuanian art historian Jurgis Baltrušaitis. Baltrušaitis visited Armenia in 1927 and 1928 to study its architecture. Toramanyan accompanied him to a number of monuments and provided him with architectural plans and photographs. This cooperation contributed to the publication of Baltrušaitis's book on Armenian and Georgian architecture and medieval art in Europe. Toramanyan's review for Baltrušaitis's book *Études sur l'art médiéval en Géorgie et en Arménie* (1929) was published only in 1948. Baltrušaitis's book *Le Problème de l'Ogive et l'Arménie* (1936) was dedicated to Toramanyan's memory. Two letters by Baltrušaitis and four letters by Focillon addressed to Toramanyan have been published alongside Armenian translations in the book "Letters" (1968). This encouraged a broader reflection on the collaboration and connections between the researchers.

**Keywords:** Armenian architecture, Jurgis Baltrušaitis, Toros Toramanyan, correspondence, cooperation.

## Contact between Researchers

The materials preserved in the archives of National Museum-Institute of Architecture after Alexander Tamanyan (NMIAAT) are of great historical value for Armenian architecture. Among the valuable documents is the archive of prominent Armenian architect and architectural historian Toros Toramanyan (1864–1934), a pioneer of comprehensive studies of Armenian architecture. During our research, we found an archival document in Russian handwriting attributed to Baltrušaitis, addressed to

Mr. Tamanyan, whose last name is written in Armenian. The content of that letter is as follows:

As you know, I am personally interested in sculpture and ornaments, as well as traverse arches, and we need documents about them. Please ask Toramanyan to prepare a material about this issue. He can help us a lot. We would like to receive information about their true date, photos, and names with explanations. 22 July 1928, Baltrušaitis.<sup>1</sup>

<sup>1</sup> The handwritten letter is preserved at the NMIAAT, the fund of Toros Toramanyan, No. 13–3. All translations are by the paper's author.

This letter presents an intriguing reference point for exploring the connection between Baltrušaitis and Toramanyan, the nature of their collaboration and the results it brought, as well as the choice of language the two scholars used for communicating.

It is worth remembering that art historian Jurgis Baltrušaitis was the son of famous symbolist poet, translator, and diplomat Jurgis Baltrušaitis (1873–1944). “Nowadays few people know that the Lithuanian poet loved Armenian literature. He wrote an extensive article about Armenian literature for the Lithuanian encyclopedia from ancient times to the beginning of the 20th century. Probably his son, an art historian, inherited his interest in Eastern and Armenian culture.”<sup>2</sup> Baltrušaitis Jr. studied at Sorbonne University from 1923 to 1926. Under the supervision of Henri Focillon, he searched for the roots of Romanesque art in Sumerian, Armenian, and Georgian cultures.<sup>3</sup> Baltrušaitis started his research on Armenian and Georgian architectural decor and structural elements with the advice of his teacher. In order to study the Armenian historical-architectural heritage, Baltrušaitis visited Armenia in 1927 and was warmly welcomed by Toramanyan. The meeting with the Armenian architect had a great impact on the young scholar and initiated scientific cooperation. The scientific support and professional knowledge provided by Toramanyan were also highly appreciated by Focillon.

In 1968, at the initiative of Nazik Toramanyan, her father’s letters were published in a book.<sup>4</sup> The letters by Baltrušaitis and Focillon, dated 1927–1929 and handwritten in French, were also published in the original language and in translation to Armenian; they are currently preserved in the archive of the Service for the Protection of Historical Environment and Cultural Museum-Reservations located in Yerevan, where this study was conducted.

When examining the letters, there is no doubt that Baltrušaitis and Focillon had great respect for Toramanyan. In these letters, Baltrušaitis addressed Toramanyan as “Dear Master,” and Focillon addressed him as “Dear Sir” or “Dear Colleague.” Before referring to the content of the correspondence, let us take a closer look at the aforementioned archival letter handwritten in Russian. During the investigation, it turned out that this archived document is a Russian translation of a part Baltrušaitis’s letter addressed to Alexander Tamanyan. It was translated by Nazik Toramanyan probably while she was preparing to publish her father’s letters. Alexander Tamanyan (1878–1936), mentioned in the letter’s fragment, was the President of the Committee of Armenian Antiquities Preservation, on which Toramanyan also served; Tamanyan too supported Baltrušaitis during his scientific expeditions in Armenia.

The research of Armenian architectural history is deeply connected with the name of architect Toros Toramanyan, who spent his life systematically researching Arme-

2 Levon Chuqaszian, “Jurgis Baltrušaitis contribution,” *Reborn Armenia* 527(2), 1990, pp. 62–63.

3 Nubar Papukhian, *Toros Toramanyan, Life and Work*. Yerevan: Lusakn, 2005, p. 61.

4 Toros Toramanyan, *Letters*, N. Toramanyan (ed.), Yerevan, 1968.

nian architecture, highlighting its previously overlooked uniqueness and significance, and arousing interest in Armenian architecture not only among Armenian, but also European scholars.<sup>5</sup>

Toramanyan studied in the Academy of Fine Art in Constantinople from 1888 to 1893 and graduated with a degree in architecture. He went to Bulgaria in 1896, where he designed several buildings, and then came to Paris to improve his professional skills. As a free auditor, Toramanyan attended lectures on art history and studied Eastern colophons in the local museums. In 1903 Toramanyan went to Ani – the capital of medieval Armenia's kingdom – to study its architectural monuments. He conducted research in Ani until 1912, becoming one of the most important employees of the archaeological expedition supervised by Nikolay Marr.

“Before Toramanyan's investigations in Armenia, the studies of Armenian architecture were largely limited to the discovery of bibliographical information and description of the monument. It is obvious that such an approach would not provide a steady base for open scientific thinking. Toramanyan, by nature of his activities, methods, and working style, opened a wide path for those working in the field of heritage in Armenia.”<sup>6</sup> He examined

hundreds of medieval architectural monuments, made unique measurements of these monuments, most of which no longer exist and have survived only in the form of graphic images.<sup>7</sup> Toramanyan traveled from village to village examining, measuring, and taking photos of well-preserved and partly ruined monuments of Armenian architecture. The drawings were made in accordance with so-called academic principles and were executed with quality. Toramanyan's priority was to take accurate measurements (with the help of triangles), producing a set of documents containing evidence of that such monuments existed.<sup>8</sup> Toramanyan's efforts have earned him the attention of architectural historians, who appreciated his work.<sup>9</sup>

“One of the European art historians, Josef Strzygowski, was the first to show an interest in Toramanyan's scientific articles and the conclusions drawn in them, so Strzygowski wrote and published in 1918 the book *Architecture of the Armenians and Europe*, in two volumes, based on the materials on Armenian architecture that Toramanyan took to Vienna.”<sup>10</sup> Strzygowski mentioned in his book that Toramanyan would emphasize the uniqueness of Armenian architecture. Baltrušaitis was

5 Toros Toramanyan, *Materials of Armenian Architecture History*, ed. Joseph Orbeli. Yerevan: Armfan, 1942, p. 15.

6 Gevorg Musheghian, “Regarding a Few Questions of Toramanyan's Working Style of Scientific Research,” by keeping the rest as it is. *Problems of Armenian Architecture* (collection of conference papers dedicated to the 120th anniversary of Toramanyan's birth), Yerevan, 1984, pp. 36–38.

7 Yuri Bocharov, “The Importance of Toramanyan's Works in the Study of Armenian Architecture,” *Problems of Armenian Architecture*, Yerevan, 1984, pp. 6–7.

8 Gevorg Musheghian, “Regarding a Few Questions of Toramanyan's Working Style of Scientific Research,” pp. 36–38.

9 Nikoghayos Buniatian, “Architect Toros Toramanyan,” *Soviet Art* 19(4), 1934, p. 8.

10 Varazdat Harutyunian, *Our Contemporary Fellow Artists*. Yerevan: Gitutyun, 2001, pp. 10–12.

well-informed about the abovementioned book. Toramanyan criticized the erroneous approach of most European scholars to Armenian architecture and based the issues of its development on professionally substantiated evidence. Toramanyan's professional activity has an extremely important role, exerting influence beyond the borders of Armenia. This was also the reason for Baltrušaitis's interest in his research.

## Correspondence

Baltrušaitis first visited Armenia in 1927. During this visit, the young art historian personally met with Toramanyan. He came to Armenia for the second time in 1928. A study of Baltrušaitis and Toramanyan's correspondence gives us more details about their cooperation.

Baltrušaitis's first letter to Toramanyan is dated December 1, 1927. Upon returning to Paris, Baltrušaitis thanked Toramanyan for the warm welcome and the photograph of architectural monuments that had sparked interest at the Sorbonne. He also expressed hope that Toramanyan received Focillon's letter, which had been sent a few weeks ago. He then asked Toramanyan to provide some information about the Armenian arrow-shaped arch. Baltrušaitis wanted to publish a few plans drawn by Toramanyan that had already been published by Strzygowski: he explained that these plans will give him the opportunity to show the provenance of the illustrations used by Strzygowski and to substantiate the authorship of Toramanyan's work.<sup>11</sup>

Baltrušaitis visited Georgia and Armenia during his second expedition; his second letter, dated September 21, 1928, was sent from Tbilisi. In that letter Baltrušaitis informed Toramanyan of his plans to visit Armenia again in early October, and that he would personally deliver Focillon's letter to Toramanyan. He asked Toramanyan to provide materials on Armenian ribbed arches as well as on the sculptures and ornaments of medieval Armenian architecture. Baltrušaitis mentioned his desire to study *Armenian illuminated manuscripts*, especially illuminated initials abundantly decorated with animals and monsters, and asked Toramanyan to speak on his behalf to the director of Etchmiadzin's Matenadaran museum about the possibility of conducting such studies. Baltrušaitis concluded his letter by expressing gratitude and respect to Toramanyan and his wife.<sup>12</sup> It should be noted that Baltrušaitis received a warm welcome from the museum's director Senekerim Ter-Hakobian.

We did not find any other letter by Baltrušaitis during our research of Toramanyan's archive. To reconstruct the cooperation between Baltrušaitis and Toramanyan, we find it necessary to introduce some of Focillon's letters to Toramanyan.

Focillon's first letter to Toramanyan, sent from Paris, is dated November 12, 1927. In this letter Focillon expressed gratitude to Toramanyan for the attention to his student Baltrušaitis and for showing him a valuable collection of photographs. Focillon informed Toramanyan that they would publish some of his documents and credit

11 This letter was published in: Toros Toramanyan, *Letters*, N. Toramanyan (ed.), Yerevan, 1968, pp. 332–334.

12 *Ibid.*, pp. 345–347.

his work. He expressed hope that the scientific cooperation will continue, concluding the letter with a sincere show of gratitude.<sup>13</sup>

In a letter from July 6, 1928, Focillon gave some information about the progress of Baltrušaitis's research. He wrote: "We hope that the work will be published this winter, and we wish you would be interested in that, as you played an important role."<sup>14</sup> Focillon mentioned that Baltrušaitis would visit Armenia again expressed regret that he would not be able to accompany the young art historian to meet Toramanyan in person.

In Focillon's letter from November 27, 1928, he thanked Toramanyan for the warm welcome he gave Baltrušaitis and for receiving him as a guest in the Armenian scholar's family. He mentioned that Baltrušaitis was highly impressed with the time he spent with Toramanyan in Etchmiadzin. Focillon thanked Toramanyan for introducing them to Armenian national art and called Toramanyan the cornerstone of archaeological research in Armenia.<sup>15</sup>

In a letter dated February 6, 1929, Focillon informed Toramanyan that the University of Paris is going to establish a center of archaeological studies dedicated to the study of Armenian and Georgian heritage. Since the center should publish research materials and organize lecture series, he invited Toramanyan to become a member of the research center. Focillon concluded the letter with his own best wishes and those of the Sorbonne's famous professor,

Charles Dill.<sup>16</sup> However, as our research shows, Toramanyan did not go to Paris due to his deteriorating health.

The letters confirm that Toramanyan personally accompanied Baltrušaitis to Armenian architectural sites and aided the Lithuanian art historian with his professional experience and advice. In addition, Toramanyan provided plans, measurements, and photographs of monuments with comments about their characteristics, sculptures, and ornaments.

### Results of Cooperation

The introduction of Baltrušaitis's book *Études sur l'art médiéval en Géorgie et en Arménie* (1929) was written by Focillon. In his seminal book *Vie des formes* Focillon admitted that Baltrušaitis did amazing research on the ornamental dialectics of Romanesque architecture<sup>17</sup> and emphasized the comparative significance of the work. He also claimed that Baltrušaitis's analysis is a novel contribution to the study of Romanesque art, revealing its connections with the medieval art of Armenia and Georgia.<sup>18</sup> He briefly referred to Armenian history and expressed gratitude to Toramanyan, who significantly contributed to the study by providing knowledge and materials.<sup>19</sup>

Toramanyan showed great interest in Baltrušaitis's book and wrote an extensive

<sup>13</sup> *Ibid.*, pp. 330–331.

<sup>14</sup> *Ibid.*, pp. 343–345.

<sup>15</sup> *Ibid.*, pp. 347–348.

<sup>16</sup> *Ibid.*, pp. 350–351.

<sup>17</sup> Henri Focillon, *Vie des formes*, trans. Susanna Khachatrian. Yerevan: Sargis Khachents, 1999, p. 13.

<sup>18</sup> Jurgis Baltrušaitis, *Études sur l'art médiéval en Géorgie et en Arménie*, trans. Susanna Bocholian. Yerevan: Sargis Khachents, 2003, p. 16.

<sup>19</sup> *Ibid.*

review for it. He appreciated Baltrušaitis's work, saying that "the book is a great and magnificent edition, complemented by beautiful images,"<sup>20</sup> and that it will enrich the European library of Armenian studies. The review was published only after Toramanyan's death in the second collection of his *Materials for the History of Armenian Architecture History* (1948), where the review is titled *Baltrušaitis's Book*. Toramanyan's archives contain a handwritten copybook titled *About Braid Ornaments*.<sup>21</sup> Toramanyan also discussed the "entrelacs" that were thoroughly researched by Baltrušaitis. As Toramanyan puts it, "[t]he author shows perfect knowledge of Romanesque art and that of his chosen branch of Armenian architecture, and he develops the studies of entrelacs with great faithfulness. He examines all the forms, their textures, variety, and complexity which shows to the reader the artists' measuring skills and flexibility in sculpting. Indeed, it is amazing to see the author's extraordinary love for monuments and the thorough study of accurate forms of entrelacs, done with great patience of mathematician."<sup>22</sup> Toramanyan added: "I will not provide any more information about Armenian entrelacs, and the skillful and architectural way they are sculpted, it is

enough to discuss the author's impressions and views, I'd just like to mention that some modern artists are interested in this study."<sup>23</sup>

The review reveals that the Armenian government supported Baltrušaitis's expeditions. The Armenian government, especially the National Commissariat of Enlightenment, helped to organize trips, provided transportation, and documents which aided the art historian.<sup>24</sup> In implementing his research, Baltrušaitis also received great support from the Committee of Preservation of Antiquities and its president, the architect Alexander Tamanyan.

In 1928, Baltrušaitis managed to get permission from Soviet border command to visit Old Julfa and study the khachkars. He went there and took historical photos. His paper on Julfa was published in 1986 in Lisbon. In 2015, a major book by Jurgis Baltrušaitis and Dickran Kouymjian, *Julfa on the Arax and its Funerary Monuments*, was presented at the *Institute of Scientific Research on Ancient Manuscripts* of the Mashtots Matenadaran.

It should be noted that Baltrušaitis's comparative book *Études sur l'art médiéval en Géorgie et en Arménie*, upon its publication, was met with great enthusiasm both in Armenia and in the Armenian diaspora, but it was translated and published in Armenia only in 2003.

Regarding the architectural plans and other materials that Toramanyan gave to Baltrušaitis for preparing two books dedicated to Armenian art and architecture, we can draw the following conclusions:

20 Toros Toramanyan, *Materials for the History of Armenian Architecture*, Karo Ghafadarian (ed.). Yerevan: Academy of Sciences of the Armenian SSR, 1948, p. 36.

21 This copybook is preserved in "Service for The Protection of Historical Environment and Cultural Museum-Reservations" State Non-commercial Organization, under the No. 69 a-b in Toros Toramanyan's archive.

22 Toramanyan, *Materials of Armenian Architecture History*, pp. 36–40.

23 *Ibid.*

24 *Ibid.*, p. 37.

Toramanyan provided Baltrušaitis mostly material about monuments in Western Armenia (currently in Turkey), like the sites located in Ani, Adiaman, Tamashlu, Oshki, Khakhu, Khtskonq. Baltrušaitis did not visit Western Armenia located within Turkey. Toramanyan studied in Ani while he did the measurements and took photographs of Western Armenian the monuments. But this does not mean that he provided Baltrušaitis with material related only to Western Armenia. While conducting this research, it was interesting to find out what monuments Toramanyan and Baltrušaitis visited together in Armenia. We suppose that these are the Mother Cathedral of St. Etchmiadzin, the churches of St. Gayane, St. Hripsime, Zvartnots (Toramanyan reconstructed the plan of the Zvartnots Cathedral), probably the Avan Cathedral, and the other monuments in Yerevan.

Since we have not found any more letters, we do not have more information about the scholars' further cooperation. A little information is given by the architect and researcher Armen Zarian, who notes that the material for the book *Le Problème de l'Ogive et l'Arménie* was collected with the help of Toramanyan.<sup>25</sup> In this book, Baltrušaitis thoroughly analyzed *the intersecting transverse arches* in Armenian, Muslim cultures, and Gothic architecture. He argued that Armenian art had great importance for the integrity of Gothic structures. He claimed that Armenians understood the rational structure of intersecting arches and

developed it with constructive logic.<sup>26</sup> Focillon, in his work *Art d'Occident: Le Moyen Age roman et gothique* (1947), agreed with Baltrušaitis's conclusions. Toramanyan passed away in 1934, Toramanyan passed away and Baltrušaitis dedicated *Le Problème de l'Ogive et l'Arménie* to the memory of his Armenian colleague. The work was translated into Armenian, supplemented with comments by Armen Zarian, and published in the journal *Armenology Abroad: Questions of Armenian Architecture History* in 1973.

The scientific cooperation between Toramanyan and Baltrušaitis yielded productive results, in the form of published works in Europe on specific elements of Armenian art and architecture. Their cooperation was also reflected in Baltrušaitis's research, which highlighted the importance and value of the Armenian heritage for world architecture, reassessing its importance for the development of European art and architecture. Baltrušaitis's work was also appreciated in Armenia by famous Armenologists Harutyun Kyurtyan, Karapet Pasmajian, Armenak Sagzian.<sup>27</sup>

25 Armen Zarian, "The Centers of the Research of Armenian Architecture Abroad," *Problems of Armenian Architecture*, pp. 10–12.

26 Jurgis Baltrušaitis, "Le Problème de l'Ogive et l'Arménie," trans. Armen Zarian. *Armenology Abroad* 9, No. 5, 1973, pp. 5–71.

27 See *Monthly Magazine*, 1934, No. 5–6, Novels, 1947, pp. 1–9.



## References

- Baltrušaitis, Jurgis. *Études sur l'art médiéval en Géorgie et en Arménie*. Translated by Susanna Bocholian. Yerevan: Sargis Khachents, 2003. Բալթրուշայտիս, Յուրգիս «Ուսումնասիրություն վրաց և հայ միջնադարյան արվեստի»: Թարգմանությունը՝ Սուսաննա Բոչոլյանի: Երևան, Սարգիս Խաչենց 2003:
- Baltrušaitis, Jurgis. *Le Problème de l'Ogive et l'Arménie*. Translated by Armen Zarian. *Armenology Abroad* 9, no. 5, Yerevan: 1973, pp. 5–71. Բալթրուշայտիս, Յուրգիս «Հատվող կամարների պրոբլեմը և Հայաստանը»: Թարգմանությունը Արմեն Զարյանի: Հայագիտությունը Արտասահմանում, no. 5, Երևան, 1973, 5–71:
- Buniatian, Nikoghayos. “Architect Toros Toramanyan”, *Soviet Art* 19, no. 4 (April 1934), pp. 7–9. Բունիադյան, Նիկողայոս «Ճարտարապետ Թորոս Թորամանյան», Խորհրդային արվեստ, no. 4 (Ապրիլ 1934), pp. 7–9:
- Bocharov, Yuri. “The importance of Toramanyan's works in the study of Armenian architecture.” *Problems of Armenian architecture*. Thesis of republican scientific session reports dedicated to Toramanyan's 120th birthday anniversary, Yerevan, 1984. Բոչարով, Յուրի «Թ. Թորամանյանի ստեղծագործության նշանակությունը հայ ճարտարապետության ուսումնասիրման պրոբլեմներ: Թորոս Թորամանյանի 120-ամյակին նվիրված հանրապետական գիտական նստաշրջանի զեկուցումների թեզեր, Երևան, 1984.
- Focillon, Henri. *Vie des formes*. Translated into Armenian by Susanna Khachatryan. Yerevan: Sargis Khachents, 1999. ֆոկիլոն, Անրի «Ձևերի կյանքը, գովք ձեռքին»: Թարգմանությունը՝ Սուսաննա Խաչատրյանի: Երևան, Սարգիս Խաչենց 1999.
- Toramanyan, Toros “*Materials of Armenian Architecture History*”, collection of materials, edited by Joseph Orbeli, 403. Yerevan: Armfan, 1942. Թորամանյան, Թորոս «Նյութեր հայկական ճարտարապետության պատմության», աշխատությունների ժողովածու, խմբ. Հովսեփ Օրբելի, 403: Երևան: Արմֆան 1942.
- Toramanyan, Toros “*Materials of Armenian Architecture History*”, second collection of materials, edited by Karo Ghafadarian, 307. Yerevan: Pub. House of the Academy of Sciences of the Armenian SSR, 1948. Թորամանյան, Թորոս «Նյութեր հայկական ճարտարապետության պատմության», աշխատությունների երկրորդ ժողովածու, խմբ. Ղաֆադարյան, 307: Երևան: ՍՍՀ ԳԱ հրատ. 1948.
- Toramanyan, Toros “*Letters*,” created and introduced by Nazik Toramanyan, 512 (Yerevan: Pub. House of the Academy of Sciences of the Armenian SSR, 1968. Թորամանյան, Թորոս «Նամակներ», կազմ. և ծան. Նազիկ Թորամանյանը, 512: Երևան: Հայկ. ՍՍՀ ԳԱ հրատ. 1968.
- Harutyunian, Varazdat. Our contemporary fellow artists. Yerevan: 2001. Հարությունյան, Վարազդատ «Արվեստակից ժամանակակիցներս», Երևան: 2001.
- Musheghian, Gevorg. “Regarding to a few questions of T. Toramanyan's working style of scientific research”, *Problems of Armenian architecture*, Yerevan, 1984. Մուշեղյան, Գևորգ «Թ. Թորամանյանի գիտահետազոտական աշխատանքային ոճի մի քանի հարցերի մասին», Հայկական ճարտարապետության պրոբլեմներ: Թորոս Թորամանյանի 120-ամյակին նվիրված հանրապետական գիտական նստաշրջանի զեկուցումների թեզեր, Երևան, 1984.
- Papukhian, Nubar. *Toros Toramanyan, Life and work*. Yerevan: Lusakn, 2005. Պապուխյան, Նուբար: Թորոս Թորամանյան, Կյանքն ու գործը: Երևան: Լուսակն, 2005.
- Chuqasdzian, Levon. “Jurgis Baltrušaitis contribution.” *Reborn Armenia* 527, No. 2, 1990, p. 62–65. Չուքասզյան, Լևոն: «Յուրգիս Բալթրուշայտիսի ավանդը», Վերածնված Հայաստան, No 2, 1990, pp. 62–65.
- Zarian, Armen “The centers of the research of Armenian architecture abroad”, *Problems of Armenian architecture*, Yerevan, 1984. Զարյան, Արմեն: «Հայ ճարտարապետության ուսումնասիրության կենտրոնները արտասահմանում», Հայկական ճարտարապետության պրոբլեմներ: Թորոս Թորամանյանի 120-ամյակին նվիրված հանրապետական գիտական նստաշրջանի զեկուցումների թեզեր, Երևան, 1984.
- Archive Materials**  
National Museum-Institute of Architecture after Alexander Tamanyan, Fund of Toros Toramanyan N 13-3. Service for The Protection of Historical Environment and Cultural Museum-reservations, State Non-commercial Organization, Fund of Toros Toramanyan, N 313-3, N 313-7, N 313-9, N 313-13, N 313-16, N 69 a-b.