Game drives of the Aralo–Caspian region
Adapa Monographs

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Game drives of the Aralo-Caspian region
Vadim N. Yagodin, edited by W. Paul van Pelt and Alison Betts
Game drives of the Aralo-Caspian region

Vadim N. Yagodin
With contributions by Shamil S. Amirov
Translated by W. Paul van Pelt
Edited by W. Paul van Pelt and Alison Betts
# Contents

Figures vii
Tables xi
Preface xiii

**Introduction by Vadim N. Yagodin and Shamil S. Amirov**  1
1. Architecture by Vadim N. Yagodin and Shamil S. Amirov  9
2. Chronology by Vadim N. Yagodin  93
3. Function and prey species by Vadim N. Yagodin  113
4. Archaeological context by Vadim N. Yagodin  141
5. Historical context by Vadim N. Yagodin  191
6. Socioeconomic significance by Vadim N. Yagodin and Shamil S. Amirov  201
7. Conclusions by Vadim N. Yagodin  213

Catalogue 217
Works cited 227
Index 239
### Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.1</td>
<td>Vadim N. Yagodin and Alison Betts in-field.</td>
</tr>
<tr>
<td>I.1</td>
<td>View of the western escarpment, Karynzharyk Depression.</td>
</tr>
<tr>
<td>I.2</td>
<td>Map of Central Asia showing the location of the Ustyurt Plateau.</td>
</tr>
<tr>
<td>I.3</td>
<td>Remnants of an arrow-shaped structure along the western escarpment, Boszhira Valley.</td>
</tr>
<tr>
<td>I.4</td>
<td>The Duana subsystems and the area investigated using satellite imagery.</td>
</tr>
<tr>
<td>I.5</td>
<td>Distribution of arrow-shaped structures on the Ustyurt Plateau.</td>
</tr>
<tr>
<td>I.6</td>
<td>Distribution of arrow-shaped structures in the North Ustyurt group.</td>
</tr>
<tr>
<td>1.1</td>
<td>View of the western escarpment, Zhegalgan Fault.</td>
</tr>
<tr>
<td>1.2</td>
<td>Plan of the North Ustyurt group based on the original field drawings.</td>
</tr>
<tr>
<td>1.3</td>
<td>Plan of the North Ustyurt group based on satellite imagery.</td>
</tr>
<tr>
<td>1.4</td>
<td>Duana 1 arrow-shaped structure 3.</td>
</tr>
<tr>
<td>1.5</td>
<td>Aerial view of Duana 1 arrow-shaped structure 5.</td>
</tr>
<tr>
<td>1.6</td>
<td>Plan of the Duana cemetery arrow-shaped structure.</td>
</tr>
<tr>
<td>1.7</td>
<td>Distribution of arrow-shaped structures in the Bulanbay (V) and Shiykuduk (VI) groups.</td>
</tr>
<tr>
<td>1.8</td>
<td>Bulanbay group, arrow-shaped structure 1, seen from the north-east.</td>
</tr>
<tr>
<td>1.9</td>
<td>Distribution of arrow-shaped structures in the Shiyoba (III), Kol'say (IV), and Dzharykpa 2 (X) groups.</td>
</tr>
<tr>
<td>1.10</td>
<td>Distribution of arrow-shaped structures in the Aksai (VII) group.</td>
</tr>
<tr>
<td>1.11</td>
<td>Plan of Aybuyir.</td>
</tr>
<tr>
<td>1.12</td>
<td>Aerial view of Berniyaz 3.</td>
</tr>
<tr>
<td>1.13</td>
<td>Berniyaz 3.</td>
</tr>
<tr>
<td>1.14</td>
<td>Distribution of sites in the Aybuyir-Prisar’ikam’ish group.</td>
</tr>
<tr>
<td>1.15</td>
<td>Aksaimak 2.</td>
</tr>
<tr>
<td>1.16</td>
<td>Aerial view of Ibrakhimsha 3.</td>
</tr>
<tr>
<td>1.17</td>
<td>Plan of Kazgan 1.</td>
</tr>
<tr>
<td>1.18</td>
<td>Plan of Karamata 7.</td>
</tr>
<tr>
<td>1.19</td>
<td>Khanterek.</td>
</tr>
<tr>
<td>1.20</td>
<td>Distribution of sites in the Prisar’ikam’ish subgroup.</td>
</tr>
<tr>
<td>1.21</td>
<td>Dar’yal’ik 1.</td>
</tr>
</tbody>
</table>
Game drives of the Aralo-Caspian region

Figure 1.22 Dar’yal’ik 2. 55
Figure 1.23 Aerial view of Dekcha 1. 57
Figure 1.24 Plan of Dekcha 1. 58
Figure 1.25 Plan of Chalburun 1 62
Figure 1.26 Tamga at Chalburun 1. 64
Figure 1.27 Chalburun 1, detail of western arrow-shaped structure. 65
Figure 1.28 Distribution of sites along the eastern edge of the Zhar’inkuduk salt marsh. 66
Figure 1.29 Zhar’inkuduk 6b. 68
Figure 1.30 Plan of Zhar’inkuduk 8. 72
Figure 1.31 Plan of Zhar’inkuduk 12. 73
Figure 1.32 Plan of Zhar’inkuduk 14. 74
Figure 1.33 Plan of Zhar’inkuduk 14. 76
Figure 1.34 Plan of Zhar’inkuduk 14, western arrow-shaped enclosure. 78
Figure 1.35 Zhar’inkuduk 10, occupation site. 80
Figure 1.36 Distribution of sites in the Kend’irlisor group. 83
Figure 1.37 View of the western escarpment. 84
Figure 1.38 Plan of Karamaya 1. 85
Figure 1.39 Plan of Karamaya 3. 86
Figure 1.40 Plan of Karamaya 7. 88
Figure 1.41 Plan of Karamaya 8. 90
Figure 1.42 Group of structures in the Beineu system. 91
Figure 2.1 View of the western escarpment, Tuzbair Sor. 93
Figure 2.2 Satellite view of Duana 1, arrow-shaped structure 3. 95
Figure 2.3 Vessel fragments found in the North Ustyurt group. 96
Figure 2.4 Vessel fragments excavated at Dekcha 1 and Aybuyir. 102
Figure 2.5 Vessel fragments found at Zhar’inkuduk 10. 107
Figure 3.1 View of the western escarpment, Boszhira Valley. 113
Figure 3.2 Aerial photograph of a desert kite in eastern Jordan with a large central enclosure and several surrounding smaller ones. 122
Figure 3.3 Petroglyphs depicting desert kites with trapped animals inside the enclosure. 123
Figure 3.4 Iroquis hunters driving caribou into a chute. 125
Figure 3.5 Kulan (Equus hemionus). 129
Figure 3.6 Distribution of kulan in Central Asia and Kazakhstan and their migration routes in the 18th and 19th centuries. 131
Figure 3.7 Saiga antelope (Saiga tatarica). 133
Figure 3.8 Goitered gazelle (Gazella subgutturosa). 135
Figure 3.9 Ustyurt sheep (Ovis orientalis vignei). 136
Figure 4.1 View of the western escarpment, Tortkul Mountain, and the Kend’irlisor salt marsh, Karynzhaky Depression. 141
Figure 4.2 Ak-Chungul’ 1, kurgan 3. 146
Figure 4.3 Grave goods found in Ak-Chungul’ 1, kurgan 3. 147
Figure 4.4 Grave goods found in Ak-Chungul’ 8, kurgan 1. 149
Figure 4.5 Zhar’inkuduk 14, kurgan 2. 152
Figure 4.6 Grave goods found in Zhar’inkuduk 14, kurgan 2. 153
Figure 4.7 Kazgan 2, group III, kurgan 3. 155
Figure 4.8 Grave goods found in Kazgan 2, group III, kurgan 3. 155
Figure 4.9 Kazgan 2, group III, kurgan 4. 156
Figure 4.10 Grave goods found in Kazgan 2, group III, kurgan 4. 157
Figure 4.11 Grave goods found in Kazgan 4, kurgan cemetery, kurgan 1. 158
Figure 4.12 Kazgan 4, kurgan cemetery, kurgan 2. 160
Figure 4.13 Kazgan 5, kurgan cemetery, kurgan 2. 162
Figure 4.14 Grave goods found in Kalal’ik 2, kurgan 1. 164
Figure 5.1 View of the western escarpment, Boszhira Valley. 191
Figure 6.1 View of the western escarpment, Zhegalgan Fault. 201
Figure 7.1 Remnants of an arrow-shaped structure along the western escarpment, vicinity of Beket-Ata. 213
Figure C.1 The eastern precipice of the Ustyurt Plateau with talus slopes beneath. 217
Tables

Table 1.1 List of structures by type in the North Ustyurt group. 26
Table 5.1 Qipchaq burial types found in Ustyurt divided by period. 198
Table 6.1 Faunal data from Kurgancha. Proportion of wild and domesticated animal components. 203
Table 6.2 Faunal data from Kurgancha. Wild animal remains divided by species. 204
Table 6.3 Faunal data from Sumbetimalan-Kurkreuk. Proportion of wild and domesticated animal components. 205
Table 6.4 Faunal data from Sumbetimalan-Kurkreuk. Wild animal remains divided by species. 205
Table 6.5 Faunal data from arrow-shaped structure Dekcha 1. Wild animal remains divided by species. 209
Table 6.6 Faunal data from arrow-shaped structure Dekcha 1. Relative proportion of wild and domesticated animal components. 209
Table 6.7 Faunal data from Kulanly. Relative proportion of wild and domesticated animal components. 211
Table 6.8 Faunal data from Kulanly. Wild animal remains divided by species. 211
Table C.1 Catalogue of arrow-shaped structures in the North Ustyurt group. 218
Table C.2 Catalogue of other arrow-shaped structures on the Ustyurt Plateau. 224
In memory of Vadim N. Yagodin
Preface

W. Paul van Pelt

This book is a translation and revised edition of Yagodin’s *Strelovidnye Planirovki Ustyurta*, originally published in Tashkent in 1991. The volume is one of the most significant works in Ustyurt archaeology and one of the few that integrates (geo)archaeological, ecological, and ethnographic data. It does not merely reapply knowledge and insights acquired in other contexts but provides important socioeconomic and new primary excavation data that are to a large extent Yagodin’s own work. Despite its importance, the book is hardly known outside of Russia and Central Asia. A discouragement to foreign readers has no doubt been the fact that it was directed at a Russian-speaking audience. It is hoped that this English translation will make the book more accessible and help academics realise the extraordinary archaeological potential of the Ustyurt region.

In this translation I standardised a few examples of inconsistent use of capitals and numbering. Several measurements and editing errors have also been corrected. The technical terminology has been rendered with phrases specific to the book (e.g. arrow-shaped structures instead of game drives). In translating, a certain loss of the author’s writing style and individuality is practically unavoidable and on occasion I deemed it necessary to omit repetitive passages and to edit ambiguous descriptions for the sake of clarity. Although these alterations might seem prominent at times, they never affect the actual substance of the book. Unless otherwise credited, I accept full responsibility for any translation errors in this volume. The ideas and opinions expressed in the text are those of the author Vadim N. Yagodin.

In the course of this translation I was very fortunate to receive the help of numerous friends and colleagues without whose unselfish efforts on my behalf this work could never have been completed. Natasha Simonova (University of Oxford), Olga Kasyanova (University of Cambridge), and Shamil Amirov (Research Institute
of the Humanities, Karakalpak Branch of Academy of Sciences of Uzbekistan) helped me with numerous problems of Russian and I owe an enormous debt of gratitude to them. Discussion or advice on a wide variety of topics came from Tessa de Roo (University of Cambridge), who supported me with her patience and knowledge throughout writing this translation. Special thanks are due to Alison Betts (University of Sydney) for inspiring me to undertake this work and for reading the whole manuscript and suggesting improvements on almost every page. I also express my deepest gratitude to my college, Trinity Hall, for providing the technical facilities on which the book was put together and for constituting a convivial and friendly environment in which to work. Finally, I thank my family for encouraging me in all my pursuits. I am especially grateful to my parents, Wim van Pelt and Antoinette van Pelt-Elbers.

Alison Betts
I owe a huge debt of gratitude to the vision, initiative, and academic enthusiasm of Vadim N. Yagodin. Without him, my own long and fascinating career in the archaeology of Central Asia would never have been possible. In 1991 Yagodin was the Director of the Institute of History, Archaeology and Ethnography, Karakalpak Branch of the Academy of Sciences of the Republic of Uzbekistan (now the Research Institute of the Humanities, Academy of Sciences of Uzbekistan, Karakalpak Branch). Following the fall of the Soviet Union, he saw the great potential offered by the possibilities of international collaboration and I was one of the fortunate recipients of his resourcefulness. I am also grateful to the Lenin Library, Moscow, which even in Soviet times subscribed to the European language journals that made our contact possible. Our common interest in game drives was the inspiration that brought us together, and although our projects since ranged far and wide beyond mass hunting, we both continued to retain strong interests in this area of research. The study of game drives has seen a recent resurgence due to the wide release of high-resolution satellite imagery and the development of Google Earth. However, the study of such structures through remote sensing provides only a small part of the story. The bulk of our understanding of animal drives, including their dates, the ways in which they were used and how they fitted into the lives and economies of the people who built them, can only be achieved through fieldwork.

When I first began work in Central Asia, I was keen to bring the research of Russian-speaking colleagues to an international readership. This was an imperative in the early days of the Central Asian Independent States when literature was hard to access, and
few people had the language skills to read it when they could acquire the texts. Since then, the advent of electronic translation, while far from perfect, has been of great assistance in making more material accessible, and the ubiquity of electronic manuscripts has made dissemination of even rare publications widespread. Nonetheless, there is still room for quality translations of key works. Yagodin’s *Strelovidnye Planirovki Ustyurta* is a classic study of game drives in Central Asia. It is the most detailed work on this subject to date in all of Asia, Central and otherwise. As such, and in gratitude to Yagodin, I am deeply content to see this translation finally in publication, able to reach a fully international audience and to provide comparative data for what I hope will be many new studies on the remarkable phenomenon of game drives.

I very much thank W. Paul van Pelt for bravely undertaking the translation of Yagodin’s work and for producing a manuscript of such high quality. His work includes translation, editing, and redrafting of all the illustrations for these sections. The manuscript has also benefitted greatly from new work by Shamil Amirov using remote sensing data which have been incorporated into the original text following translation. This study was carried out prior to Yagodin’s death and he had an active input into the interpretations of the new material. The University of Sydney provided support and facilities for
the work of bringing this volume together. This was achieved in part through a Special Studies Programme Award from the Faculty of Arts for 2013 and as part of a publication program conducted under the Australian Research Council Grant DP130101268. Renato Sala and Jean-Marc Deom of the Laboratory of Geoarchaeology, Al-Farabi Kazakh National University, Almaty, have kindly provided images and shared data and ideas. Don Cleveland has provided much helpful editorial advice for this, among other volumes. Finally, I must thank Nicola Gazzana, without whose infinite patience and support work on this volume would have been impossible.
Introduction
Vadim N. Yagodin and Shamil S. Amirov

Figure I.1 View of the western escarpment, Karynzharyk Depression. Photo: Eduard Manukyants (Kovcheg Ecological Center).
Game drives of the Aralo-Caspian region

The Ustyurt Plateau lies between the Aral and the Caspian seas in the extreme north-west of Central Asia (Fig. I.2), comprising a vast uplifted desert plain sharply delineated by steep cliffs (chink). The plateau has a stark landscape with low limestone hills and wide sweeping horizons and an altitude varying between 60 and a little over 300 metres above sea level. Across the centre lie the Karabur and Muzbel’ ridges. There are two large drainage depressions, Barsakelmes and Assakeaudan, and extensive sandy upland massifs, which are similar in places to the sandy areas of Sam and Mataykum.

The plateau is one of the harshest and driest regions in the world. The climate is continental with extreme daily and annual temperature fluctuations. Average annual rainfall is very low, ranging from 90 mm in the south to 120 mm in the north. With such low rainfall, agriculture is unlikely to be successful outside of the few oases where fields can be irrigated with groundwater. Fodder resources include Artemisia vulgaris, Anabasis salsa, and Crataégus, and are restricted largely to seasonal pastures. A considerable part of the plateau has little or no snow cover, which encourages concentrations of migrating wild animals. It also creates favourable conditions for livestock pasture and seasonal occupation by nomads.

The plateau borders the regions of the ancient settled agricultural civilisations of Turkmenia in the south, the valley and delta of the

Figure I.2
Map of Central Asia showing the location of the Ustyurt Plateau.
Amu-dar’ya and ancient Khwarezm in the south-east, and the regions of South Priuraliya and the Orenburg steppes in the north, which were traditionally inhabited by nomadic and semi-nomadic pastoral tribes (Sauromatian-Sarmatian tribes in antiquity and Pecheneg, Oghuz, and Qipchaq tribes in the medieval period).

Archaeological fieldwork in Ustyurt has revealed a number of very large, stationary animal drives. Because of their distinctive shape, these have been given the name ‘arrow-shaped structures’. Some of the structures are ancient, but their use is also recorded in recent ethnographic accounts. An attempt has been made here to study these structures within their broader archaeological and economic context. To this end, this study incorporates a large variety of data. The general distribution of the arrow-shaped structures has been plotted using aerial photography and large-scale topographic maps, while more specific details have been obtained through a combination of archaeological investigation and low-level aerial photography. Additional evidence has been collected from ethnographic sources. This work has recently been updated through a study of satellite imagery.

Figure 1.3
Remnants of an arrow-shaped structure (foreground) along the western escarpment, Boszhira Valley. Photo: Alexander Petrov.
Game drives of the Aralo-Caspian region

History of research

The discovery and study of arrow-shaped structures in Ustyurt is a relatively recent phenomenon (Fig. I.3). The structures were first identified in 1952 during excavations at the site of Erburun-kala, a medieval town on the Khantersek Promontory, at the edge of the Ustyurt Plateau. The leader of the expedition, Tolstov, noted:

in many places on the edge of the Ustyurt Plateau very enigmatic structures have been discovered, which consist of trenches radiating across the landscape, paved with rubble or stone slabs, long embankments, and shallow circular pits. Some scantly pottery remains allow us to date these structures to the medieval period. These structures of unknown function are situated mostly on promontories at the edge of the Ustyurt Plateau. The nature of the relief precludes their use as water storage reservoirs. They may have been used to trap animals driven inside them. (Tolstov 1958: 78)

In the early 1970s, the Department of Archaeology of the Institute of History, Language and Literature of the Uzbek Academy of Science, Karakalpak Branch, began an extensive program of archaeological research on the Ustyurt Plateau. Aerial photographs revealed a group of arrow-shaped structures running for dozens of kilometres from the Duana Promontory to the desert of Mataykum (Yagodin et al. 1972: 86–90) (Fig. I.4). In 1975, research continued in the area of the Duana Promontory. It then became clear that the arrow-shaped structures of the North Ustyurt group were combined in a large system. Two structures were studied on the ground. The results of this fieldwork provided evidence for a relative date and possible function of the structures (Yagodin 1978: 79–83).

In 1981, several arrow-shaped structures were investigated on the Dekcha Peninsula and on the western cliffs of Ustyurt by the Povolzhsko-Ural expedition of the Institute of Archaeology of the Russian Academy of Sciences (Fig. I.3). It was suggested that the structures were used for trapping mouflon, but no date could be established for their use (Galkin 1983: 433). In 1983, more arrow-shaped structures were discovered in the Aybuyir district around the medieval mausolea of Ibrakhimsha. In addition, four arrow-shaped structures were excavated by the Ustyurt Archaeological expedition at Aybuyir, Berniyaz 3, Khantersek, and Dekcha. In 1984, further work was carried out on structures near the Duana Peninsula. In 1985, the North Ustyurt Archaeological expedition discovered a new
Introduction

A topographical survey was carried out and several structures were excavated. In 1986, an arrow-shaped structure was discovered near Old Beineu by the Povolzhsko-Ural expedition of the Institute of Archaeology of the Russian Academy of Sciences. In the same year, an extensive program of archaeological and topographical exploration was completed with the use of a MI-2 helicopter. Aerial reconnaissance made it possible to drastically expand the study area and examine regions that were difficult to reach overland. Several new arrow-shaped structures were discovered as a result. Fieldwork continued in 1987 and 1988, revealing another 12 arrow-shaped structures along the western cliffs of the Ustyurt Plateau. Thus, by the end of 1988, 54 arrow-shaped structures had been identified and studied to different degrees.

Further fieldwork was conducted in the first decade of the 21st century in Kazakhstan, resulting in the discovery of a set of 40 new arrow-shaped structures located in three clusters along the northern cliff face in 2007–8 by the Laboratory of Geoarchaeology of Kazakhstan (Deom and Sala 2009: fig. 1). In 2012, a new study of the plateau was made by Amirov (Amirov et al. 2015) using satellite images. This study identified new structures within known systems and also mapped new systems beyond the range of previous fieldwork on the plateau (Fig. I.4). It revealed two previously unknown types of structures,
which are presumed to also be associated with hunting. In 2013, the Globalkites research project team undertook an expedition along the south-western edge of the plateau, in the Ustyurt Nature Reserve. They also carried out a comprehensive survey of the entire plateau using satellite images, discovering a large number of previously unknown structures (Barge et al. 2016). In total, 508 hunting structures are now known on the Ustyurt Plateau.

**Distribution**

The arrow-shaped structures are located in specific regions of the plateau. Based on the pre-1988 fieldwork, five groups were identified:

1. North Ustyurt group: two subsystems

![Figure I.5 Distribution of arrow-shaped structures on the Ustyurt Plateau: 1 – North Ustyurt group; 2 – Aybuyir-Prisar’ikam’ish group: 2.1 – Berniyaz 3 subgroup; 2.2 – Aybuyir subgroup; 2.3 – Kazgan subgroup; 2.4 – the Prisar’ikam’ish subgroup; 3 – Zhar’inkuduk group; 4 – Beineu group; 5 – Kend’irlisor group. This map is from Yagodin’s original publication. For a current distribution map of arrow-shaped structures and related features see Barge et al. 2016: fig. 2.](image-url)
2. Aybuyir-Prisar’ikam’ish group: several subsystems (Aybuyir, Berniyaz 3, Kazgan, Prisar’ikam’ish)
3. Zhar’inkuduk group
4. Beineu group
5. Kend’irlisor group.

The Zhar’inkuduk group is located on the interior of the plateau. The North Ustyurt and Aybuyir-Prisar’ikam’ish groups are situated along the cliffs in the east, and the Kend’irlisor and Beineu groups are located along the north-western escarpment (Fig. I.5).

Remote sensing studies carried out in 2012 revealed 12 additional subsystems of arrow-shaped structures in North Ustyurt, bringing the total there to 14 (Fig. I.6). These systems cover a vast area and run in an almost continuous line from the shores of the Aral Sea to the western edge of the plateau (c. 155 km from east to west).

**Typology**

The arrow-shaped structures of Ustyurt can be divided into six types:

- Type 1 (examples in North Ustyurt and Zhar’inkuduk groups) consists of two or three drivelines leading to a pair of triangular...
subenclosures that are connected by a large central enclosure. The subenclosures have a ring-shaped bank on each corner. Other banks are sometimes built along their exterior. New research carried out in 2012 shows there are two variants: one opening to the north with some minor variation to east or west (variant 1), and one opening to the south (variant 2). The structures are linked to each other, forming vast chains.

- Type 2 (examples in Aybuyir-Prisar’ikani’sh and Kend’irlisor groups) uses the cliff edge as one side of a large triangular enclosure. In most cases the apex of the triangle leads to one or two arrow-shaped subenclosures that are entered through a narrow gap between two inturned walls. These normally have ring-shaped banks on each corner. Other banks are sometimes built along the sides of the enclosures.

- Type 3 (examples in Kend’irlisor group) consists of a triangular enclosure with only a single driveline (only Karamaya 7 has two). In most examples the cliff edge functions as a second ‘driveline’. In most examples the enclosure has ring-shaped banks on all corners. Other banks are sometimes built along the exterior of the enclosure.

- Type 4 (examples in Kend’irlisor group) consists of walls that are built across a promontory and almost block it from side to side. The entrance of these structures consists of two opposing wall segments that reach down to the cliff edge and often have a ring-shaped bank at their tip. The latter can be doubled and occur on one or both sides of the entrance. Drivelines are not necessary for this type as the promontory itself outlines a large funnel-shaped area (Barge et al. 2016).

- Type 5 (examples in North Ustyurt group) consists of a round, elliptical, or sub-triangular enclosure without drivelines.

- Type 6 (examples in North Ustyurt and Beineu groups) consists of a very large half-ellipse that tapers to points at the ends, giving it an overall crescent shape. They have wide openings and in some cases the interior corners are fenced off, forming small terminal subenclosures. This type has no drivelines. However, the sides of the entrance together from a funnel into the enclosure.