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## The Panty Question in Yamal: Sawing, Trading, Discussing

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*Since 1990s the collection of panty (reindeer velvet antlers) have become one of the important part of the economy of the tundra peoples. The panty trade had formed the whole social network between reindeer herders and “merchants” — the collectors of panty connecting a reindeer herder with the global market.*

*After the outbreak of anthrax in 2016 in the Yamal-Nenets Autonomous Okrug, the discussion of the problems of overgrazing and the lack of reindeer pastures have intensified. Some of the scholars claim that the steep rise of the Yamal reindeer herds in the last decades is closely related with the so-called “panty reindeer herding” (allegedly more profitably than the meat-oriented herding but treating the pastures more extensively because of the increasing of the number of the unslaughtered animals) and such a view have provoked the huge discussion. The article presents the different views of the polemicists and analyzes them.*

*To understand the whole mechanism of the panty business the authors during the fieldwork at Yamal in 2015–2018 have studied its various stages on the level herder — “merchant”: the choice of animals and ways of sawing antlers, the seasonal detour of reindeer herders camps by panty collectors, the practices of exchanging commodity for supplies and cash, the share of sales of panty in the structure of income of the tundra family, the transportation of panty.*

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## Introduction

*Panty*, the unfossilized young antlers of a deer covered with velvety skin since ancient time have been greatly demanded by the pharmacology and cuisine of East Asia. The most valuable are the *panty* of the Siberian *maral* (red deer — *Cervus elaphus*), the center of breeding of which in modern Russia is Altai region in South Siberia. In the Soviet period the extract of red deer velvet antlers was registered under the brand name “*Pantocrin*”. In the 1980s the effectiveness of drugs derived from reindeer *panty* was justified, and the pilot *panty* campaign was launched in all the northern reindeer herding regions of the USSR. According to the experts’ calculations the Magadan region was supposed to become the leader of the harvesting of *panty*, followed by the Yakut Autonomous Soviet Socialist Republic and the Tyumen oblast’ (Tekhnologiya..., 1985).

In the post-Soviet Russia, after the collapse of state farms (*sovhozy*), despite the increase of the *panty* prices for antlers, the harvest of horns stopped in most of the Northern regions. Such a decline was facilitated by a number of local factors at the local level (the general degradation of reindeer herding and logistical difficulties) and the extreme volatility of the global *panty* market, which went through several crashes, the last of which was provoked by the appearance of Sildenafil (*Viagra*) at the end of 1990s.

Nowadays more than 730 thousand reindeer are grazed on the territory of the Yamalo-Nenets Autonomous Okrug (hereinafter as “YNAO”), and 600 thousand of them are kept in the tundra, the most “nomadic” areas — Yamalsky, Tazovsky and Priuralky *raions* (districts)<sup>1</sup>. Up to 80 % of reindeer are concentrated in private

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<sup>1</sup> Here we specially do not refer to the official statistic data from the Okrug authorities. Only the organized reindeer herding enterprises conduct the exact calculation of herds while the number of private animals is fixed according the verbal information from their owners who often used to understate the stocks in times. We consider as too optimistic the hope of exact calculation on the base of the data from the vaccination campaigns against anthrax started since 2017, knowing the skeptical attitude of the *tundroviki* (tundra people) to any official calculations.

herds, the rest are owned by *MOPs* (municipal reindeer enterprises) and other heirs of socialist state farms (joint-stock companies, production cooperatives). The annual summer sawing of *panty* has become a stable practice of the Yamal nomads, despite all the fluctuations of world prices for “velvety gold” and has retained its importance throughout the past decades. In summer, the tundra is flood with trecols<sup>1</sup>, all-terrain vehicles, boats, helicopters with collectors of valuable raw materials — starts a *panty* campaign, which in the calendar economic cycle of nomads supplements in a certain sense the winter slaughter campaign.

Ethnographic data demonstrates that such *panty* trade — large-scale and long-standing — does not exist in other reindeer herding regions of the Russian North or it still had not been enlightened; perhaps the only exception — J.O. Habeck’s observations in Komi Republic (Habeck, 2005: 115–116). For Yamal, on the contrary, the whole number of aspects — the practice of collecting *panty*, their function in the economy of private households and reindeer herders cooperations (municipal enterprises, different forms communities), ways of interaction between *coomersanty* (merchants) and nomads, types of entrepreneurs, chains of business (from Yamal to Asian markets) — had been described, at first glance, in sufficient details. The works by F. Stammler, textually largely duplicating each other, presented a variety of cases introducing the inclusion of *panty* in both — cultural and economic contexts of the Yamal tundra (Stammler, 2004, 2005). F. Stammler’s fieldwork observations relate to the early 2000s, and several years later the scholar himself stated that new trends had emerged in the *panty* trade (Stammler, 2011).

The recent crucial events in Yamal — the 2013–2014 extensive losses of livestock caused by ice crust, the 2016 outbreak of anthrax — demonstrated, as was widely claimed in media, the reindeer industry crisis connected with overgrazing in the tundra, one of the reasons for the latter was named the so-called *panty* reindeer herding. The purpose of this article is to focus on this ambiguous conception and to enlighten certain practices of *panty* trade in Yamal.

### ***Panty* cases**

We’d like to present two cases of *panty* trade; both are connected with our recent fieldwork conducted in Yamalsky and Priuralsky *raions* of the Yamalo-Nenets Autonomous Okrug. The first relates to our 2015–2016 fieldwork in the Yarsalinskaya tundra of the Yamal region (PMA, 2015–2016). The Serotetto family we have lived

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<sup>1</sup> All-terrain vehicle on low-pressure tires.

with for a whole calendar year owns the rather small reindeer herd according to the standards of Yarsalnskaya tundra — about 300 heads, and migrates in the so-called “Left North” of the Yamal Peninsula. The annual track of the family was about 500 km. The winter pastures of the Serotetto family, where we started our fieldwork in April 2015 and finished year later were located in the lower Yuribey river, 250 km to the North from Yar-Sale, the *raion* center. Our masters, like most of the Yamal post-Soviet private herders unlike the “*sovhozy*” brigades, during winter do not migrate to the forest zone of the Nadym *raion*.

Private herders (*chastniki*), migrating separately for most of the year used to unite together into a summertime “brigades” consisted of several families for the more effective guarding and grazing their herds. In the same way, the Serotetto family united with their neighbors into one camp of 4 *chums* and about 2000 reindeer. *Chastniki* in that part of Yamal (about 20 families) call themselves “*Mordyayhintsy*” or “*Mordynder*” (Nenets *морды’ мер* — people of Mordy), since their summer pastures located in the lower reaches of Mordyyakha — one of the largest Yamal river. Mordyyakha reindeer herders’ migration routes pass near the Bovanenkovo gas field and industrial village and the Obskaya — Karskaya industrial railway.

The *panty* harvest season in the YNAO starts from the end of June and lasts until the first decade of August. In mid-July 2015, two fishermen came to our united camp. The guys, relatives of the Serotetto family, during the *panty* campaign, used to work as collectors for the big boss from the Komi Republic. These reindeerless Nenets fishermen live all-year on Mordyyakha, therefore their collecting *panty* logistics was connected with water transport. They travelled from camp to camp which stayed in that time near Mordyyakha and its tributaries by motor boat.

The *panty* trade at our camp was very dynamic, being in contrast with the practices described by F. Stammer (Stammer, 2004, 313–315). There were no any preliminary and repeated visits of collectors for the establishing of the list of goods needed by herders. Even knowing the arrival date of the young traders, the reindeer herders did not saw *panty* beforehand, therefore all the operations (reindeer round-up, lassoing, sawing, weighing and calculation) were completed in several hours in the afternoon. The fishermen didn’t bring any goods for barter, payed the herders in cash immediately and took all the fresh *panty* at once to their local hub at Bovanenkovo gas extracting village.

A few days later, another batch of *panty* from our camp was handed over to the pilots of the Vorkuta helicopter serving the Bovanenkovo gas field. The pilots were



Fig. 1. Sawing *panty* in Yarsalinskaya tundra. Yamalsky raion, YNAO, July 2016.  
Photo: A. I. Volkovitskiy, A. N. Terekhina

informed about the certain landing place by the satellite phone. F. Stammer has also described the practice of the weekend overflights of nomadic camps performed at a low altitude inaccessible to radars, with the helicopters' black box machinations (Stammer, 2011: 242). In our case the process of *panty trade*, in a sense, absorbed the hi-tech impossible in tundra yet several years ago. Received the coordinates of the camp by GPS-navigator, the reindeer herders transmitted them to Vorkuta by satellite phone charged with the gasoline generator.

Our "*panty*" experience is strongly affected by fact that during the fieldwork we were not just outside observers of the processes of sawing, collecting and trading, but the direct participants. We have seen the entire chain of interactions associated with reindeer *panty* and antlers during the annual cycle, and our life in the tundra, like the life of our tundra family, directly depended on these economic operations. Thus we can translate the view of reindeer herder towards the *panty* trade basing on our 2015–2016 fieldwork data from Yamalsky *raion*; in contrast during our 2018 summer fieldwork at Priuralsky *raion* we receive the chance to oversee the collecting of panty from the *pantovik's* (*panty* trader) side. (PMA, 2018). In addition, the data from Yarsalinskaya tundra are mostly connected with private reindeer herders, whereas in the Polar Ural region we witnessed the *panty* trade conducted with both — the "*sovhozy*" brigades and the herds of "*chastniki*".

2. In the 2018 summer we migrated with the “Sovhoz Baidaratsky” JSC reindeer herders brigade from the railway near the Laborovaya village to the summer camp located near the Bol’shoe Shchuch’e lake in the mountains of the Polar Ural. The 5 *chums* brigade is a mixed ethnic group (Khanty, Izhma Komi, Nenets) so typical for the Priuralsky raion. Unlike private reindeer herders, the *sovhozy* workers must migrate the certain route adopted by the enterprise leadership following tight schedule. The spring of 2018 had been protracted, so all the *sovhozy* brigades fall behind their schedules, so they had to migrate on wasted draught reindeer every night in order to catch up the terms<sup>1</sup>. Having reached the summer camp, men few days later leave to mountains to graze the herd for more than a month, and it is the point the *panty* traders arrived.

On the route to the summer camp we made planes how to get out from the mountains back, but it turned out that on July 15–20, the “*panty*” all-terrain vehicle should arrive and take us on board by the request of the brigadier. Indeed, in time, two caterpillar vehicles arrived; one of them stayed in the brigade waiting until all the selected *panty* in the huge herd were sawed, and we started our week-long journey through the mountains and camps on the roof of the second. The team of “*pantorezy*”<sup>2</sup>, consisting of the collector, local guide and driver, before returning to the base in Obskaya had to visit several camps to collect *panty* and exchange them for goods, pay cash and negotiate plans for the next year. We visited 6 camps of private reindeer herders, in which 15 families lived, and 9 families in 3 *sovhozy* brigades.

In early August, after the finish of the *panty* rush, we moved to the tundra on the border of the Yamalo-Nenets Autonomous Okrug and the Komi Republic, between the Polar Ural and the Kara Sea. Local reindeer herders told us much about local *panty* entrepreneurs from Vorkuta and informed us about several aspects of *panty* trade in this tundra.

The essential part of our *panty* experience besides the above-mentioned cases are many people, involved in the *panty* economy, we made acquainted over the years of fieldwork at Yamals — average collectors, guides and entrepreneurs of different scale.

### ***Pantoviki and panty transactions***

F. Stammer presented a collective portrait of the entrepreneur, the “boss” of the Yamal *panty* business, in his studies (Stammer, 2004: 115–117; Stammer,

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<sup>1</sup> In summer, on the polar day, the tundra reindeer herders try to migrate at night time, more favorable for reindeer — it becomes colder, the humidity rises.

<sup>2</sup> The pun based on the similar-sounding of *pánty* (velvet antlers) and *pantý* (arrogant behavior); moreover, in Russian *narezat’ pontý* (literally “to cut pontý”) sounds closely to *rezat’ panty* (to saw *panty*).

2005: 308–317; Stammler, 237–239). Basing himself on his 2000–2001 fieldwork, he concluded that the Yamal *panty* trade and its actors do not fully fit the typological scheme proposed by the British scholar C. Humphrey for the post-Soviet local markets (Humphrey, 1999: 34–42; Khemfri, 2010: 129–138). F. Stammler focused mainly on the persons he attributed as the new national entrepreneurs (hereinafter as NNE), who combine a number of criteria from different groups identified by C. Humphrey. On the one hand, these businessmen are local residents, moreover, indigenous people. Most of them have relatives in tundra, and together they form the reindeer herding community (“civil society of reindeer herders”). In the recent past, this group of Nenets worked at *sovhozy* as chief livestock specialists. Because of the increasing dissatisfaction regarding the level of life, they were forced to look for alternative sources of income and formed a specific type of entrepreneur in tundra.

Such activity resulted at some point in the appearance of vertically integrated reindeer herding enterprises with a wide range of activities, occupying dominant positions in the *panty* market all over Yamal. The scheme drawn by F. Stammler (from traders-shuttles to NNE) is definitely logical, but his heroes confidently are associated with certain personal stories from the Seyakha village and Seyakhinskaya tundra from the particular instant. After his later works in another tundra — in the “Left North”, where 10 years after we were migrated, the scholar did not make correctives in this part of his conclusions, although the situation with the *panty* trade here, as in the other districts of YNAO could be quite different.

Currently, even the type of “vertically integrated reindeer enterprise” in the F. Stammler’s understanding is almost the exclusive of the Seyakha tundra, where from the early 2000s only one such association has survived. Organized reindeer herding enterprises (at least, in Yamalsky *raion*) are comparatively unstable structures. This is correct even regarding to *MOPs* (municipal reindeer herding enterprises), which are regularly facing the prospect of bankruptcy and constantly reducing staff and livestock with all the guarding attitude of the authorities and the state subsidies<sup>1</sup>. In contrast, the leading *panty* traders in the past decade are fairly stable figures. Among these actors in the Yamalsky and Priuralsky *raions* one can distinguish various types of entrepreneurs, both — corresponding to the parameters of NNE, and different from it. For example, in 2018, we met Russian entrepreneurs who control the *panty* trade in a large area of Polar Ural and Shuryshkarsky region.

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<sup>1</sup> In autumn 2018 it was announced about the liquidation of the *MOP* “Yamal’skoye” (former *sovhoz* at Seyakha).

Their business is a family enterprise, where the second generation of collectors works. Being engaged in *panty* business since the 1990s, they are well aware of “their” tundra and “their” reindeer herders. Businessmen as far as possible try to be familiar with nomads, working with many of them on the basis of prolonged credit schemes — we repeatedly observed the payment of previous year debts by reindeer herders.

*Panty* traders frankly told us that every year the new players seeking to make easy money appear in “their” territory. The only way for newcomers to enter the market is reverse dumping, simply buying *panty* at higher prices. In practice, this tactic always turns out to be a failure: “we know everything here, we know how to organize the entire chain of collecting *panty* in all details, but they don’t”, — our informants emphasized. The Ural region due to its geographical features encourage, unlike the Yamal tundra, the penetration of such new shuttles.

The road system is comparatively well developed in the region — the two main roads crossing the territory in latitudinal direction (first — alongside the railway to Bovanenkovo, second — from Vorkuta to Baidaratskaya gulf) are connected with the whole network of old roads in the mountain valleys that are accessible for all-terrain vehicles and trecols. This circumstance accumulates entrepreneurial activity, which does not require, in contrast to tundra regions, access to aviation bypassing the expensive official opportunities.

We observed an even greater variety of possibilities in the area located to the north of the Polar Ural, where the reindeer herding brigades of the “Sovhoz Baidaratsky” JSC and a comparatively solid group of *chastniki* from the Vorkuta tundra and Priuralsky *raion* are concentrated in summer. Here, on the industrial road Vorkuta — Yary, the intensive *panty* trade is organized. More enterprising reindeer herders are likely to ignore high prices for goods in such tundra stores and could hitchhike to Vorkuta searching for more profitable possibilities.

In all the schemes described above the appearance of different traders but the Stammler’s NNE is possible. Moreover, the modern situation also does not oblige the origin of *pantoviki* from the community of acting reindeer herders. Many experienced “Russian” *pantoviki* perfectly know the tundra (especially since they hire experienced drivers), but at the same time they do not reject the services of indigenous guides.

The developed road network of the mountain part of the Priuralsky *raion*, which creates an abundance of opportunities for trade and traders, presents a striking contrast with the tundra areas of the YNAO. The only terrain communication line of the Yamal



region in the summertime is the Obskaya — Karskaya railway, but in recent years the nature of *panty* campaigns is determined by a number of innovations, already noted by F. Stammler (Stammler, 2011: 242–244). The development of extracting facilities has also created new opportunities for the shadow use of helicopters. Other important innovations are trecols, mobile and satellite phones and GPS-navigators, even non-state light hydro-aircraft which allowed business to reduce the cost of collecting *panty* and shift in some sense the exclusive role of guides.

During our long-term fieldwork in Yarsalinskaya tundra we were involved in this new, more “technological” trade from the herders’ side and in our case the NNE-conception requires certain commentaries. Thus, the *mordynder* families are “maintained” by two large players on the *panty* market. The first is the reindeer herding *obshcnina*, which unites most of the reindeer herders in the Yamal region; the second is the Vorkuta businessman, who has the “base” in Bovanenkovo and hires locals as collectors. To consider the *obshcnina* as a vertically integrated enterprise is hardly correct, since it’s only (in fact) an administrative superstructure allowing its members, who retain ownership rights to private reindeer, to slaughter it officially<sup>1</sup>; the businessman-outsider obviously also doesn’t satisfy the NNE definition.

In the panty season, the reindeer herders can explore several economic strategies: get cash, exchange panty for the goods brought by traders or repay the loan if the nomad had already received any supplies as the credit for the future panty. The scale of such credits could be rather wide — from rather modest (barrel of gasoline) up to really expensive (snowmobile or ATV). The combinations of these scenarios depend on the logistics, transport and perspectives of entrepreneurs.

We have the strong impression that private reindeer herders of Yarsalinskiy tundra with an average herd (300–500 heads) perceive the income from *panty* as the small summer bonus. The collection of panty falls on the period when the nomads migrate far from settlements and trading posts, so commonly they exchange panty for such food, which is not an urgent need, but a kind of surplus. F. Stammler stresses the same, calling such purchased “unnecessary” items “things beyond basic needs” for tundra farming, describing *panty* money, according to herders, as “risky”, with which it is easy to part (Stammler, 2005: 318). We claim that extremely important role in

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<sup>1</sup> The *obshcnina* movement, so popular in Yamal decade ago nowadays comes to another trend, established by the authorities. The Okrug officials consider this form of cooperation as a non-perspective, isolating the reindeer herders from the state subsidies. Thus the innovation of 2018 — to reorganize maximum households into *krest'yansko-fermerskiye hozyaystva* (peasant-farmer household) to perform the direct interaction between herder and state.

the choice of goods (and in the list of goods taken by no means to *panty* raids by traders) implicitly played by children. In summer, the schoolchildren returning from the boarding schools for holidays migrate with their families, so the parents try to pamper them buying sweets, fruits, and juices.

The quite opposite situation is observed in poor households possessing few reindeer without any opportunity of significant commercial slaughter. For such herders the *panty* money can provide the supply of goods needed for the fall. In contrast the reach reindeer herders with a large herd (1–2 thousand heads or more), summer revenues besides the goods can also be invested in serious purchases: a snowmobile or parts for it, a boat motor, a good generator, real estate, etc.

The Polar Ural nomads in compare to *mordynders* noticeable are focused mostly on barter operations within *panty* trade. The brigade grazing deep in distant mountains usually spends about five months away from any trading posts. Thus, during the *panty* time the herders try to change *panty* for food supplies and other goods. In contrast *mordynders* who stay near Bovanenkovo and the railway Obskaya — Karskaya to a greater extent are interested in cash. Extra money allows them to buy groceries and gasoline at the extracting village and to travel by train to the urban centers of *raion* and *Okrug*.



Fig. 2. The work of the all-terrain store. Priuralsky raion, YNAO, July 2018.

Photo: A. I. Volkovitskiy, A. N. Terekhina

### **Panty reindeer herding**

In the recent years, the *panty* trade in YNAO has provoked an unexpected shift in the public discourse, both in the scientific discussion and in media. The problem of *panty* reindeer herding had been revealed with unequivocal negative connotations. The selected scholars associate the critical growth of the domestic reindeer population in YNAO, primarily in the tundra *raions* (Yamalsky, Tazovsky and Priuralsky), which are several times higher than the estimated reindeer capacity of pastures, with the desire of reindeer herders to receive profit from *panty*, but not from slaughter (Mel'nikova, 2016; Laskutova, 2017, etc.). The reason for such an increasing of Yamal herds, started since late 1980s, they call the access of reindeer herders to fairly attractive external market of “velvet gold” which changed “the traditional reindeer herding” and resulted in extensive and threatening use of pasture resources. The tragic events of last years — the huge loss of lifestocks in Yarsalinskaya tundra in 2013–2014 and the 2016 outbreak of anthrax in the same region — are considered to be the direct consequence of the new form of pastoralism. It is noticeable that the most of the authors who consistently speak out in the described key belong to the natural (life) science. These biologists and botanists have convincingly demonstrated over the years that the degradation of tundra pastures in YNAO is largely associated with the uncontrolled development and increase of the large-scale reindeer herding (see eg: Bogdanov et al., 2012: 142–144). The advocates of the *panty* reindeer herding concept, universal in their opinion, for all (or for the majority) the Yamal nomads, settle not just an interesting shift in the history of reindeer tundra pastoralism, but also claim to invent the fairly simple and comprehensive explanation of the modern overgrazing in tundra, which in short term threatens environmental and social catastrophe. Moreover, behind all these concepts implicitly presents the fanciful image of a modern nomad betrayed the “traditional”/“ethnic” reindeer herding, striving for excessive enrichment, grazing objectively excess livestock, destroying tundra pastures and, as a result, its own ethnic group (Bogdanov, Golovatin, 2017: 2–5).

Historical retrospection indicates however on much more complicated relationship between the quantity of reindeer, the conditions of pastures and the turnover of *panty*. We have showed above that revenues from selling *panty* are by no means basic for the majority of Yamal reindeer herders — at best, they complement the budgets of households, somehow oriented to the meat delivery during slaughter period, as to a more stable factor, as F. Stammler wrote (Stammler, 2005: 317–318); such a purpose of

herders was confirmed also by a mass survey conducted in the Yamal tundra in 2017 (Zuev, 2018: 65–66).

The tendency of increasing the private herds in YNAO has emerged long before the appearance of the panty trade in the late 1980s. Crucial events of the beginning of the post-Soviet time — the crisis of the state *sovhozy*, the privatization of the property of the former socialist enterprises, the increase of the tundra population, the weakening of state control over private herds, the reduction of opportunities for meat deliveries for households, the depreciation of fur hunting, the social policy, depriving many Nenets people of the personal fulfillment in the urban conditions — these are just some of the factors created the huge mass of private herders placed in the conditions of, literally, survival after the USSR decline. Reducing all this contradictive complex of problems only to the emergence of extremely volatile *panty* market seems to a certain degree the straightforward viewpoint, but favorable by the YNAO authorities, searching for the easy problem explanations and solution.

The difference in the approaches of biologists and social sciences scholars also manifests in the look upon epizootics, and towards the latest the most resonant situation with anthrax that “have returned” to Yarsalinskaya tundra in 2016. For some of our colleges-natural scientists, the anthrax — is an inevitable consequence of the development of large scale Nenets households at the turn of the 19<sup>th</sup> — 20<sup>th</sup> cc., in a sense the natural response to the increasing population threatening the stability of the biosystem (Bogdanov, Golovatin, 2017: 2).

For historians and anthropologists in turn the appearance of the anthrax in Yamal is a consequence of the movement of the tundra population together with their herds: the sources witness that anthrax was first recorded in the European tundra the 1830s, penetrated through the Urals to the Yamal Peninsula in the mid-19<sup>th</sup> c., i. e. in time which is not associated with the extreme increasing of herds (Finsh, 1882: 387). Here it caused terrible losses of reindeer, which have become stable up to the liquidation of anthrax due to the veterinary in the mid-20<sup>th</sup> c.

No doubt that anthrax and other reindeer diseases accompanying Nenets reindeer herding, to a large extent, influenced the stereotypical image of a Nenets who “lives to herd reindeer, but do not herd them to live” (Klokov, Khrushchev, 2004: 55). The classic hundred years old texts of A. A. Dunin-Gorkavich, B. M. Zhitkov and V. P. Evladov gave the whole series of portraits of tundra people who experience aesthetic pleasure only by watching reindeer herds and don’t reflecting on the prospects for their commercial use (see e. g.: Zhitkov, 1913: 257). Modern authors,

in our opinion, overmystify this Nenets “contemplation,” categorizing it indeed in a primordial sense. Although thinking about “old times Nenets” it is easy to imagine the emotions of a tundra herder who happily observes his herd, bearing in mind that during his herder’s career he is doomed to lose and restore his reindeer repeatedly because of climate and epizootics (Evladov, 1992: 103).

In the quoted works of biologists and in many popular texts, Nenets are presented as pastoralists, tended to absolutely uncontrolled and excessive increase of private herds, which leads to the inevitable degradation of pastures (Bogdanov, Golovatin, 2017). We argue quite a different view on the Arctic nomads. The term “increase/build” (i. e. herds) amongst the part of the scholars acquires connotations that are close to the traditional Nenets concept of *yab* (“happiness” or “luck”, in this case, “in deer”). Modern Nenets, like their ancestors, often articulate that different persons have a different measure of luck, and if one herder in fact is destined to quick increasing of his flock, then the other will have the small herd, no matter how he works.

The “build-up” of a solid private herd indeed is a long process, and a significant increase starts, as we have observed, only after the calving exceeds greatly the number of slaughtered reindeer (for the personal and commercial purposes) of a particular household. Most families with whom we have been in contact for many years are not crazy about thoughtlessly building up their herds. On the contrary, the number of animals stays fairly stable or varies slightly, although any family as we can assume have the wishful limit of the herd.

The history of the Serotetto family demonstrates the following dynamics: during the 2013–2014 abnormal winter the household had lost almost half of approximately 500 heads. Several years later the family did not slaughter reindeer for commercial purpose, limiting the household by the slaughter only for personal use trying to restore the herd. The herder has aimed to bring the number of animals back to 500, since only in this case as he believes he can carry out commercial slaughter of the solid part of the herd. 500 is the number of reindeer that allows the family to feel relatively safe in the case of new diseases and possible losses of animals, especially in the modern situation of climate change and regular occurrence of abnormal weather conditions affecting the reindeer herding together with the degradation of winter pastures. The drop in number below 200 reindeer in a private herd not only puts the family in a risky situation of impossibility to recover the population, but also leaves no excess reindeer for commercial slaughter.

In conditions when the average price of a reindeer at a slaughter-house in recent years is estimated at about 8 thousand rubles, the slaughter of several animals does not give any significant increase to the modest budget of the private reindeer herder. The next level of opportunities opens when a herd reaches 400–500 heads; in this case the family can afford the slaughter of 50 or more animals, not undermining the population resources of the private herd. 500 — is a rather indicative figure in different sense: such a herd can be managed (literally “can be handled”) by one herder without help. One of our friends, 300 heads owner, once joked: “Probably, if I have 500 reindeer, I may want 1,000 deer, but this is only when my sons grow up, and then I should migrate at *Henskaya storona*<sup>1</sup> at winter (this Nenets winters in Yarsalinskaya tundra — *A.T. and A.V.*) and I will have to slaughter a lot of reindeer”. It is easy to see that the increase in the herd in the long term is considered only within the change of the family agency and associates with the significant changes of the migration pattern — lengthening of the migration route and the vital necessity to move to the less degraded distant forest lichens. Similar not abstract ethnic characteristics dictating not a mindless building up of herds, but ecological and labor factors limiting the reindeer households have emphasized K. Istomin for Komi Izhma reindeer herders (Istomin, 2004: 153–155). As to the Serotetto family, 3 years after loss of half reindeer, it began to slaughter them for money, although the livestock did not reach the cherished point of 500 heads. Thus, neither the term “build-up” regarding the private herds, nor the look at modern Yamal nomads in the 19<sup>th</sup> c. categories does not find confirmation in ethnographic data.

The statistical data confirming the concept of *panty* reindeer herding are in fact similarly ambiguous, especially if they are analyzed in the framework of a qualitative approach. For some scholars the sudden changes in the income structure of a nomadic family with a sharp increase of the share of profits from the selling of panty means the reorientation of the household with all the consequences. However, such an idea requires the correct interpretation of these figures. In 2015 when these data were received the dollar strengthened twice that ruble, and *panty* prices depend from the global exchange rates. Thus, the increase of the *panty* income share expresses the difference between the *panty* prices that actually doubled and the purchasing prices for meat at the slaughter houses that remained almost unchanged. This difference could be considered even more crucial if only the highest *panty* prices of antlers are examined

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<sup>1</sup> Henskaya side — the forest area of Nadynskiy *raion* on the right bank of the Ob river, with fairly reach lichen pastures.

uncritically, while in different tundras they fluctuate greatly: for example, in 2018 in Yarsalinskaya tundra — up to 1,500 rub/kg, and to the north of the Polar Ural, the 1st sort costed up to 2700 rub.

The example of the Serotetto family in this sense is also indicative: for several years the household did not slaughter reindeer at all, and limited themselves only to the *panty* and fossilized antlers trade. Thus, in the family revenues of reindeer herding, the *panty* (or “antler” in the broad sense of the word) money share was even 100 %, but, as was mentioned above, this dependence is determined not by a change in the economic or management attitude, but only by the temporal loss of a herd’s solid part and the necessity to restore it for the later commercial slaughter.

*Mordynder* use to sawing *panty* from a fairly limited group of reindeer that make up the minority in the herd. The procedure is conducted on *khora* (uncastrated stud bulls, which are kept in the herd at a ratio of 1: 18–1: 20 in relation to she-deer), part of elderly *habt* (castrated draught reindeer) and young bulls, which should be castrated soon, in August, as a result of what they will fold antlers anyway. Thus, in the herd of an experienced herder, who is aware of the traumatic nature of the operation for reindeer, a minority of animals lose *panty*. For example, in the summer of 2015, in the 4 herds of neighbors (from 120 to 800 reindeer in each), only from 30 to 100 kg of antlers were sawed. Although such a “gentle” sawing is not the rule in different tundras. Looking at our photos and videos of Yarsalinsky reindeer, their Gydan neighbors in 2017 sneered: “oh, what a horned bulls they have!”, — claiming that in the Tazovsky *raion* the scale of the sawing is more solid (PMA, 2017). Any herder in a particular year may need a larger amount of money: to purchase an expensive equipment, to buy food supplies, to pay off debts and previous credits. At the same time, as one of the experienced *panty* trader stressed: “Yes, it seems to me that the same owners use to saw about the same quantity”. Very rarely we’ve observed the *panty* sawn even from the she-deer, and it was explained by the acute financial need of the households. At the same time, the goods that they immediately acquired from the *pantoviki*, belong to those that we have already described, following F. Stammler, as surplus or luxury.

Arriving in tundra in the summertime and observing the *panty* sawing and trade, scholars often overlook the fact that the antler turnover for a tundra nomad is an all-year event. Winter practices for households are, perhaps, even more important, especially if we are analyzing the data concerning the households with an average herds and small-numbered herds who do not migrate to the forest zone for winter. Colleagues who have

assured us seriously that Nenets saw panty from all kinds of reindeer, except she-deer<sup>1</sup>, forget or are not aware of the complicated network of barter-financial transactions with fossilized antlers, which become at the snow time the central point in the purchase schemes, aiming to obtain gasoline — the most important resource of modern tundra. It should be noted that there is an obvious bias in the actualization of subjects referring the trade of antlers and *panty* in relation to the latter, which we associate with the seasonality of the scholars' "raids" to the tundra. The exception here is the study by D. V. Arzyutov, one of the outcomes of which has become an appeal to this part of the winter economy of reindeer herders (Arzyutov, 2017: 326–333). Authors of academic and popular texts describe various innovations in the material culture of Yamal nomads of the last decades: snowmobiles, telephones (satellite and mobile), snowmobiles, GPS navigators, computers, tablets, TV and satellite dishes, generators, gasoline chainsaws, even welders. Beyond the panorama of these innovations is the fact that all this park of devices requires gasoline or electricity, which produced by gasoline generators. As the 2017 mass survey have showed, the tundra family uses 8–12 barrels of gasoline on average per year, i. e. 1600–2400 l (Zuev, 2018: 69), and in different tundras lacking gas stations, the specific forms of gasoline transfers are established.

*Mordynder* can get fuel on Bovanenkovo: there are no gas stations here, but reindeer herders and fishermen interact with the drivers working at the gas field, who accumulate the excess gasoline left from their shifts and sell it at prices often lower than the average in the YNAOs. It is worth saying, this causes a unanimous condemnation of Nenets, who are wondering why they should pay at all for "stolen" gasoline. All the local nomads phones' contact lists are filled with numbers like "Andrey Gasoline", "Lesha Gasoline" — the described scheme is stable and has become more common for some families leaving for wintering in the recent years, farther north, closer to Bovanenkovo, due to degradation of pastures in the lower Yuribey river, where they traditionally spent winter. In the greater part of the tundra, a barter scheme is actual — antlers in exchange for gasoline. In 2015, after the rise of the *panty* prices, antlers also rose sharply, and the reindeer herders sawed them, changing mainly for gasoline and, to a lesser extent, for food. If in the Tambey tundra with a smaller network of trading posts, the antlers trade is more centralized through the network of "pivotal" chums (Arzyutov, 2017), in the Yuribey area such a trade remains a personal case for each reindeer herder. Bags with antlers are taken to the trading posts, where their

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<sup>1</sup> The scholar's opinion expressed in the private conversation, which provoked laughter in any chum where we retold it.



estimated cost is converted into fuel. At the same time, the trading posts workers are extremely reluctant of taking cash for their goods, insisting on barter. After converting all this exchange scheme for money (26 kg of antlers per barrel) in 2015 it results in 91 rubles per liter — more than 2 times higher the price in the *raion* center. With all this high prices, trade has its certain benefits, since the exchange is made for renewable resources — antlers — and does not require money.

Part of Yamal nomads, including the Serotetto family, wintering in the 2010s. next to the winter road Obskaya — Seyaha spontaneously have found another, albeit a modest, but expected source of gasoline. One of the Seyaha residents regularly driving the truck via the winter road, readily brought fuel, on his way back. At the same time, he was eager also to take payment with antlers but money. Moreover, the personal presence of the reindeer herder was not even required. The buyer after the phone call could leave on the winter road bags with antlers and an empty barrel with a sign with his name; at the same place, the driver unloaded the fuel on his return.

In the 2015–2016 winter the Serotetto family traded 4 barrels for antlers and bought 2 for cash — in Yar-Sale and Bovanenkovo. The master traveled to the village on other matters and, among other goods, of course brought gasoline, although its lower price increased significantly due to the long road (about 250 km one way). Recalling the wintering in the Yamal tundra with reindeer herders, a cozy lit chum, the family spending the dark time watching movies, an amazing, incomparable to summer state of mobility that a snowmobile gives, we can assure that all this would have been impossible without gasoline, most of which the family had received in exchange for antlers. In turn, the notorious “*panty* reindeer herding” in the form claimed by some scholars would make such life schedule impossible, since in the summer all the reindeer would have lost their embellishments so demanded by herders in winter.

## Conclusion

The *panty* trade is a relatively new phenomenon for Yamal reindeer herding, but at the same time a well-established part of productive, economic and cultural practices, existing over 30 years, and during this period 2–3 generations of reindeer herders and *panty* traders have been included in the process. For comparison: during the same interval (30 years in mid 20<sup>th</sup> c.) in Yamal the Soviet power was established, collectivization was carried out and a new system of interaction between tundra and sedentary structure was formed. The *panty* business has created a whole network of contacts and relationships between the actors, a kind of blockchain in a sense from the

owner of the herd to the Asian consumer. Within this system, the typical images of “*pantorezy*” turn out to be extremely variable — they are influenced by the scale of their business, the variety in logistic capabilities, remoteness from local hubs and other dynamically changing regional and global factors in different tundras.

We argue that in the historical dynamics, the *panty* trade for the reindeer herders has structurally replaced the fur hunt. The fur trade both before the revolution and in the Soviet period was of great importance for many households. This resource was relevant in barter operations and as a source of cash. After the collapse of the USSR and the depreciation of fur and the decline of trading infrastructure in tundra based on *sovhozy*, the rising *panty* trade in a certain sense turned out to be a salvation for most of the reindeer herders, especially in the situation of reduction or full liquidation of state controlled slaughter in some tundra in the 1990s. Fur hunt, *sovhozy* wages, traditional natural exchange in the Soviet tundra formed the reindeer herders family budget, in which cash and tundra barter (reindeer, fish, sledges, fur clothes) were mixed in balance. In the new post-Soviet time, the tundra nomads, increased in number, turned out to be deprived of other livelihood activities except reindeer and fish — in these circumstances the increase of private herds had become inevitable.

We would like to add more arguments to the discussion of *panty* reindeer herding in Yamal, pointing that such specific form of herd managing, at least amongst the collectives that we observed, does not exist. *Panty* reindeer herding, regardless of the region — South Siberia, New Zealand, China or Yamal — implies adapted for a particular landscape modes of breeding and grazing of deer with a certain age and sex structure of the herd, with solid part of horned males, giving the main income. Nothing of the kind have happened within the households of the tundra Nenets, and there are no trends to change the existing order. Moreover, if the *panty* trade would become the dominant factor in the economy of the nomads, their routes and rhythms of migrations apparently would be arranged depending on the logistics of traders and trade points. Exactly in such a subordination the interaction between the location of slaughter houses (and the construction of the new ones) and nomads’ migration is organized. In many areas of YNAO (for e. g., in parts of the Panayevskaya tundra, or in the Tambay tundra), local reindeer herders complain about the irrational “covering” of the tundra with slaughter houses, and therefore the herders are forced to drive slaughter livestock over long distances, and the animals lose their fat, and their owners — part of the income. Thus, the tundra nomads adapt to the slaughter infrastructure just as *panty* traders depend from the routes of the reindeer herders, and not vice versa.

In other words, the Yamal nomads did not change the key principles of their house holding, counting on additional income, therefore, we emphasize once again that any speculation about the special *panty* reindeer herding first invented by scientists, and after them, by officials and media turned to be groundless. They discredit the modern practices of the nomadic population and, even worse, overshadow the social aspects that mostly affect the economy of the YNAO reindeer herders, and, consequently, the vital problems of tundra overgrazing.

### References

Arzyutov, D.V. (2017). Oleni i/ili benzin: esse ob obmenakh v severo-iamalskoi tundre [Reindeer and/or gasoline; the essay about the trade in the Northern Yamal tundra]. In *Sotsial'nye otnosheniia v istoriko-kulturnom landshafte Sibiri* [Social relations in the historical-cultural landscape of Siberia]. St. Petersburg, 314–348.

Bogdanov, V.D., Golovatin, M.G., Morozova, L.M., Ektova, S.N. (2012). Sotsial'no-ekonomicheskie usloviia promyshlennogo osvoeniia poluostrova Iamal [Social-economic conditions of the industrial development of the Yamal peninsula]. In *Ekonomika regiona* [Economy of the region], 3 (1), 141–150.

Bogdanov, V.D., Golovatin, M.G. (2017). Sibirskaia iazva na Iamale: ekologicheskii vzgliad na traditsionnoe olenevodstvo [Anthrax in the Yamal Peninsula: an ecological view on traditional reindeer herding]. In *Ekologiya* [Ecology], 2, 1–6.

Evladov, V.P. (1992). *Po tundram Iamala k Belomu ostrovu* [Through the Yamal tundra to the Belyi island]. Tyumen, 281 p.

Finsh, O. (1882). *Puteshestvie v Zapadnuiu Sibir'*. Soch. D-ra Finsha i A. Brema. [The journey to Western Siberia. Work by Dr. A. Finsch & A. Brehm]. Moscow, 578 p.

Golovnev, A.V., Perevalova, E.V., Abramov, I.V., Kukanov, D.A., Rogova, A.S., Useniuk, S.G. (2015). *Kochevniki Arktiki: tekstovo-vizual'nye miniatiury* [The nomads of the Arctic: text and visual miniatures]. Ekaterinburg, Al'fa-print, 132 p.

Habeck, J.O. (2005). *What it means to be a herdsman: the practice and image reindeer husbandry among the Komi of Northern Russia*. Lit Verlag, Münster, 271 p.

Humphrey, C. (1999). Traders, “disorder” and citizenship regimes in provincial Russia, In *Uncertain Transitions: Ethnographies of Change in the Postsocialist World*. Ed. by M. Borawoy and K. Verdery. Oxford/Lanham (Maryland), Rowman & Littlefield, 19–52.

Istomin, K.V. (2004). *Etnoekologicheskaya kharakteristika komi-izhemskego olenevodstva. Dissertatsiya na soiskaniie uchenoj stepeni kandidata istoricheskikh*

nauk. [*Ethno-ecological characteristics of the Komi Izhma reindeer herding. Candidate Dissertation*]. Syktyvkar.

Khemfri, K. (2010). *Postsovetskiye transformatsii v aziatskoy chasti Rossii* [*Post-Soviet transformations in the Asian part of Russia*]. Moscow, “Natalis”, 382 p.

Klokov, K. B., Khrushchev, S. A. (2004). *Olenevodcheskoe khoziaistvo korennykh narodov Severa Rossii: informatsionno-analiticheskii obzor* [*Reindeer husbandry of indigenous peoples of the Russian North: information-analytical review*]. St. Petersburg, VVM Publ., 182 p.

Laskutova, A. (2017). Na Iamale konchaiutsia pastbishcha. Aborigeni riskuiut ostat'sia bez olenei [There pastures are ending in Yamal. Aboriginal people risk being left without reindeer.]. In *Nakanune.RU*. Available at: <https://www.nakanune.ru/news/2017/10/16/22486131/> (accessed 10 December 2018).

Mel'nikova, Zh. (2016). Tundra protiv kommertsii [Tundra vs. commerce]. In *Rossiiskaia gazeta* [*Russian newspaper*]. Available at: <https://rg.ru/2016/09/08/reg-urfo/uchenye-predupredili-ob-opasnosti-bolshogo-chisla-olenej-dlia-iamala.html> (accessed 10 December 2018).

*Panty, den'gi, dve pily* [*Panty, money, two saws*] (2015). Available at: [https://www.youtube.com/watch?v=J8J1\\_ytbN5c](https://www.youtube.com/watch?v=J8J1_ytbN5c) (accessed 10 December 2018).

PMA (2015–2016). *Polevye materialy avtorov, 2015–2016. Ekspeditsiia v Iamal'skii raion Iamalo-Nenetskogo avtonomnogo okruga* [*Authors' fieldwork data, 2015–2016. An expedition to the Yamal district, Yamalo-Nenets Autonomous Okrug*].

PMA (2017). *Polevye materialy avtorov, 2017. Ekspeditsiia v Nadymskii, Priural'skii, Tazovskii, Iamal'skii raiony Iamalo-Nenetskogo avtonomnogo okruga* [*Authors' fieldwork data, 2017. An expedition to the Nadumskiy, Priuralskiy, Tazovskiy and the Yamal districts of Yamalo-Nenets Autonomous Okrug*].

PMA (2018). *Polevye materialy avtorov, 2018. Ekspeditsiia v Priural'skii, Iamal'skii raiony Iamalo-Nenetskogo avtonomnogo okruga* [*Authors' fieldwork data, 2018. An expedition to the Priuralskiy, the Yamal districts of Yamalo-Nenets Autonomous Okrug*].

Stammler, F. (2004). *The Commoditisation of Reindeer Herding in Post-Soviet Russia: Herders, Antlers and Traders in Yamal*, In Bernhard Streck (Hg.): *Segmentation und Komplementarität. Organisatorische, ökonomische und kulturelle Aspekte der Interaktion von Nomaden und Sesshaften. Beiträge der Kolloquia am 25.10.2002 und 27.06.2003*. Halle 2004 (Orientwissenschaftliche Hefte 14; Mitteilungen des SFB “Differenz und Integration”, 105–122.

Stammler, F. (2005). *Reindeer Nomads Meet the Market. Culture, Property and Globalisation at the "End of the Land"*. Reihe, Halle Studies in the Anthropology of Eurasia. Bd. 6, 2, 320 p.

Stammler F. (2011). Capitalism in the Tundra or Tundra in the Capitalism? Specific Purpose Money from Herders, Antlers and Traders in Yamal, West Siberia. In *Economic Spaces of Pastoral Production and Commodity Systems. Markets and Livelihoods*. Ed. by Jörg Gertel & Richard Le Heron. London, Ashgate (Ashgate Economic Geography Series December 2011), 231–246.

*Tekhnologiia zagotovki pantov severnykh olenei v tundrovoi zone (Metodicheskie rekomendatsii)*. Minisrestvo sel'skogo khoziaisva RSFSR. Protokol ot 2 apreliia 1985 goda № 9 [*The technology of reindeer panty harvesting (Methodical recommendations)*]. *The Ministry of agriculture of the R.S.F.S.R.*. Available at: <https://docs.cntd.ru/document/902371231> (accessed 10 December 2018).

Zhitkov, B.M. (1913). *Poluostrov Iamal [Yamal Peninsula]*. St. Petersburg, 349 p.

Zuev, S.M. (2018). Dokhody olenevodov Iamal'skogo raiona, kak odin iz pokazatelei urovnia zhizni pribrezhnykh territorii Arktiki [The income of the reindeer herders of the Yamalsky raion as one of the indicator of the level of life of the Arctic coastal territories]. In *Nauchnyi vestnik Iamalo-Nenetskogo avtonomnogo okruga [The research bulletin of the Yamalo-Nenets Autonomous Okrug]*, 1(98), 62–70.

## **Пантовый вопрос на Ямале: пиление, торговля, дискуссия**

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*С 1990-х годов пиление пантов (молодых неокостеневших рогов северного оленя) стало одним из важных составляющих экономики тундровиков. Торговля пантами сформир-*

рвала целую социальную сеть между оленеводами и «торговцами» — покупателями пантов, связывающими оленеводов с мировым рынком.

После вспышки сибирской язвы в 2016 году в Ямало-Ненецком автономном округе актуализировалось обсуждение проблем перевыпаса и отсутствия оленьих пастбищ. Некоторые ученые настаивают, что рост поголовья ямальских оленей в последние десятилетия тесно связан с так называемым пантовым оленеводством (якобы более прибыльным, чем оленеводством, ориентированным на сдачу мяса, но предполагающим более интенсивное использование пастбищ из-за сокращения доли убойных животных), и такой взгляд вызвал волну обсуждений. В статье представлены и проанализированы различные взгляды полемистов.

Чтобы понять весь механизм пантового бизнеса, авторы в ходе полевых работ на Ямале в 2015–2018 годах изучили его различные стадии на уровне пастухи — «торговцы»: выбор животных и способы пиления, сезонное посещение оленеводческих стоянок сборщиками пантов, практики обмена товаров на припасы и наличные, рассмотрена доля продаж пантов в структуре доходов семей-тундровиков, а также способы их перевозки.

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*Ключевые слова:* Ямал, ненцы, оленеводы, кочевники, панты, проблемы перевыпаса, пастбищные ресурсы, кочевая экономика, пантовое оленеводство.

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