

**A study of Ghrita Kalpana w.s.r. To Vagbhata Samhita****Dr. Khushabu Singh.**

(P. G. Scholar)

C.S.M.S.S. Ayurved Mahavidyalaya

and Rugnalaya, Kanchanwadi, Aurangabad.

**Vd. Anjali P. Hingane**

(Asso. Prof. Samhita Siddhanta Dept.)

C.S.M.S.S. Ayurved Mahavidyalaya

and Rugnalaya, Kanchanwadi, Aurangabad

**Abstract**

*Ghrita is most widely used for medicinal purpose. Its time of administration (kala), rout of administration, dose to be given (matra) and anupana should be taken into consideration while using ghrita for medicinal purpose. Ghrita used for medicinal purpose gives desired result with appropriate selection of above mentioned factors. What is the logic behind all concept, there indications and contra indications? The present paper focuses on the above points to get convincing answers.*

**Key words:** *ghrita, vagbhat samhita, matra, kalpana, kala, anupana.*

**Introduction**

In Ayurveda, medicines are given in 5 different forms as <sup>1</sup> *Swarasa*(juice), *kalka*(paste), *kwatha*(decoction), *hima*(cold decoction) and *phanta*, called as "*kalpana*". Here *kalpana* means formulation, preparations which could be used for further medicinal purposes.<sup>2</sup> Among this *kalpanas*, *swarasa* (juice) is the most potent form of medication than *kalka* (paste), *kwatha* (decoction), *hima*(cold decoction) and *phanta*. *Kwatha*(decoction) is the heaviest form to digest among all the above given *kalpana*'s.<sup>3</sup> Thus *kwatha* is a form which is considered as one of the potent as well as easiest form to digest. Most widely used form of medicine in Ayurveda is *kwatha* (decoction) and its *upkalpanas* (subsequent preparations) .

*Taila paka, kshira paka, rasa prakriya, ghrita paka, asav and arishta* are considered as the *upkalpana*'s(subsequent preparations) of the *kwatha*<sup>4</sup>. This *kalpana* (preparations) and *upkalpanas* (subsequent preparations) are meant to convert crude drugs into a form which could be assimilated easily in the body, helps to preserve the potency of drug and make drug palatable to the patient.

One of the best substances that easily assimilated in the body in its natural as well as in its medicated form is "*ghrita*".<sup>5</sup> "*Ghrita*" considered as best among all the other *sneha*<sup>6</sup> as it is assimilated easily in the body of young as well as the old ones, achieves the properties of drug by which it gets medicated without losing its original properties.

**Preparation of *ghrita kalpana***<sup>7</sup>

*Sneha kalpana* is prepared by taking *sneha* in one matra, drug *kalka*(paste) in 1/4<sup>th</sup> of *sneha* and adding *drava*(liquid) four times of *sneha*. Heating the given combination till following characters are observed gives the *sneha kalpana*.<sup>8</sup>

1. The drug *kalka* (paste) could be moulded in *varti* with two fingers.
2. If the *kalka* (paste) is exposed to fire no sound is observed.
3. "*Phen shanty*", that means no further bubbles are observed over *ghrita* while heating it.
4. *Ghrita* gets all the characters of crude drug by which it was medicated such as smell, taste, color and its medicinal properties.

Thus when this *sneha* gets prepared finally, it could be used for massaging the body, taking it orally, for the purpose of *nasya*(nasal drops), *gandush*(gargles), *basti*(enema), oiling the eyes, *Vrana* (wound) chikitsa etc.

**Indication for *sneha sevan*<sup>9</sup>**

Oleation therapy in general is prescribed for those who are to be given fomentation (*swedan*) or panchakarma procedures like *Vaman* and *Virechan*, those who have roughness in the skin(*ruksha tvaka*), those suffering from diseases due to the vitiation of vata, those who indulge in physical exercise, wine and women and those who suffer from mental strain.

**Contra indication for *sneha sevan*<sup>10</sup>**

Oleation therapy should not be administered to patients who are eligible for drying (rukshans) therapy except for the purpose of administering elimination therapy, *kapha* and *medas* (fat) are aggravated, aggravated condition of *kapha* reflects in the form of mucus secretion from the mouth and anus, those whose power of digestion is weak, those suffering from thirst and fainting, the pregnant women, those whose palate gets dried up, those having aversion of food, those suffering from vomiting, abdominal diseases, diseases due to improper digestion as well as metabolism, those afflicted with *gara* type of poison, the weak, emaciated, those having aversion to the intake of unctuous substances, those intoxicated and those being administered inhalation and enema therapies. If oleation therapy is administered to such persons, they are likely to fall victims of disastrous complications.

**Indication for *ghrita sevan*<sup>11</sup>**

Intake of *ghrita* is prescribed for those whose bodily constitution is dominated by *vata* and *pitta*, who is suffering from diseases due to vitiation of *vata* and *pitta*, those desirous of good eye sight, those suffering from phthisis and consumption, the old aged, children, the weak, those desirous of longevity, those desirous of strength, good complexion, voice, nourishment, progeny, tenderness, luster, *ojas*, memory, intelligence, power of digestion, wisdom, proper functioning of sense organs and those afflicted with injuries due to burns, by weapons, poison and fire.

**Properties of *ghrita*<sup>12</sup>**

*Ghrita* promotes memory, intellect and power of digestion, semen, *ojas*, *kapha* and fat. It alleviates *vata*, *pitta*, toxic conditions, insanity and fever. It is the best of all the unctuous substances. It is auspicious, cold in potency and sweet both in taste as well as *vipaka*. When administered according to the prescribed procedure, it increases thousand times in potency and develops manifold utilities.

Old cow *ghee* is useful in intoxication, epilepsy, fainting, insanity, toxic manifestation, fever and pain in the ear, head as well as female genital tract

**Discussion**

*Snehan* is one of the six methods of treatment.<sup>13</sup> For the purpose of *snehan*, *ghrita* used in 64 combinations<sup>14</sup> or could be given alone (*acchapan*).<sup>15</sup> Different formulations of *ghrita* are mentioned in different chapters.

Classification of *Ghrita* according to chapters<sup>16</sup>:-

<i>Name of Chapter</i> <i>Jwar chikitsa adhyaya</i>	No. of times it is mentioned <b>09</b>
<i>Raktapitta</i>	03
<i>Kasa</i>	19
<i>Shvas</i>	04
<i>Rajyakshma</i>	09
<i>Chrdihrudrogtrushna</i>	04
<i>Arsha</i>	05
<i>Atisara</i>	03
<i>Grahani</i>	02
<i>Mutraghat</i>	02
<i>Prameha</i>	02
<i>Gulma</i>	11
<i>Udara</i>	04
<i>Pandu</i>	04
<i>Kushtha</i>	05
<i>Shwitrakrumi</i>	01
<i>Vatavyadhi</i>	04
<i>Vatashonit</i>	02
<i>Balopcharniya</i>	04
<i>Balamayapratishedh</i>	03
<i>Balgraha</i>	02
<i>Bhutpratishedh</i>	05
<i>Unmad</i>	05
<i>Apasmar</i>	05
<i>Timirpratishedh</i>	06
<i>Shirorog</i>	02
<i>Guhyarog</i>	04
<i>Mushikalarka</i>	01
<i>Rasayana</i>	01

There ways of administrations is given as follows:<sup>17</sup>

1. Porridge (*Odan*)
2. *Vilepi* (a type of gruel preparation with four times water)
3. *Rasa* (meat soup)
4. Meat
5. Milk
6. Curd
7. *Yavagu* (a type of gruel prepared with six times of water)
8. Soup
9. *Shak* (curry)
10. *Yush* (vegetable soup)
11. *Kambalika* (sour milk mixed with whey and vinegar)
12. *Khad* (butter milk boiled with acid vegetables and spices)
13. *Sattu* (roasted grain flour)
14. Pastry prepared of *tila*
15. *Madya* (liquor)
16. *Leha* (linctus)
17. *Bhakshya* (food involving mastication during intake)
18. *Abhyanga* (massage)
19. *Basti* (enema)
20. *Uttar basti* (douch)
21. *Gandush* (gargle)
22. *Karna taila* (ear drop)
23. *Nasya* (inhalation)
24. *Akshi tarpana* (preparation soothing to eye).

*Ghrita* could be used in different ways during treatment i.e. for enema (*basti*), *uttar basti* (douch), nasal drops (*nasya*), massage (*abhyanga*), and gargles (*gandush*). In *urdhwa jatrugat* diseases *ghrita* is used for the purpose of nasal drops<sup>18</sup> (*nasya*) considering nose as nearest path towards the brain.<sup>19</sup> *Madhu yashtyadi ghrita* is used in *pittaj* head disorders, as *ghrita* helps to alleviate the *doshas* in the head. In diseases like oligospermia, impotency medicated *ghrita* are used



for the purpose of *uttar basti*(douch) as drugs given by genital rout helps to cure the disease early by acting locally. In this case *ghrita* is used as it helps to preserve and increase the *ojas* and semen.<sup>20</sup>

**Matra for ghr̥it sevan<sup>21</sup>**

It is observed that *sneha* is used for *shodhan* and *shaman* purpose, to expel out vitiated *dosha* from body (*shodhanartha*) *acchapan* has been explained, here *acchapan* means using only *sneha* at a time.<sup>22</sup> *Shamanartha*(pacification purpose) doses of *sneha* have been explained<sup>23</sup> as minimal dose (*laghu matra*), medium dose (*madhyam matra*) and high dose (*uttam matra*). *Shamanartha* (pacification of *dosha*) different doses of *ghrita* have been explained varying from *2masha* to *1pala* e.g. matra of *Panchagavya Ghrita* - *3 masha*<sup>24</sup>, it is explained in *charaka* and some other doses according to *vagbhata samhita* are as follows:

<b>Sauvarchaladi Ghrita (Va. Chi. 6/29)</b>	<b>One Prastha</b>
<b>Dhanvanter Ghrita (Va. Chi. 11/24)</b>	2 Pala (1 Pala:- 48G)
<b>Neelini Ghrita (Va. Chi. 14/55)</b>	2 Pala (1 Pala:- 48 G)
<b>Tiktak Ghrita (Va. Chi. 19/7)</b>	1 2 Pala (1 Pala:- 48 G)
<b>Brahmi Ghrita (Va. Utt.6/25)</b>	4 Pala
<b>Shatavaryadi Ghrita (Va. Utt.34/ 49 )</b>	1 Picchu (Karsh matra)
<b>Sarvarogbhaya nashak Narsinha Ghrita (Va. Utt.39/172-173)</b>	1 Pala

When these different ghr̥itas are used is based on predominance of *dosha* and stages of diseases.

**Kala for ghr̥it sevan<sup>25</sup>**

<b>Kshatouraskadi Ghrita (Va. Chi. 3/90)</b>	<b>Sa bhakta</b>
<b>Samsaktu Ghrita (Va. Chi. 3/107)</b>	Sa Bhakta
<b>Dadimadi Ghrita (Va. Chi. 3/9165)</b>	Paschat Bhakta
<b>Eladi Ghrita (Va. Chi. 5/31)</b>	Purvanh Kaala
<b>Jivantyadi Ghrita (Va. Utt. 13/-3)</b>	Nisha Kaala
<b>Triphladi Ghrita (Va. Utt. 13/11)</b>	Nisha Kaala
<b>Phala Ghrita (Va. Utt. 34/66)</b>	Aartava Kaala
<b>Sarvarogbhaya nashak narsinha Ghrita (Va. Utti. 39/172-173s)</b>	Sa Bhakta evamCheshta yukta

Two basic types of treatment are *shodhan* and *shaman*. In conditions where *doshas* are suppose to be expelled out from body, *ghrita* is advised to be given alone<sup>26</sup>. In conditions where pacification (*shaman*) of *dosha* is needed, *ghrita* combinations (*pravicharana*) is advised<sup>27</sup>.

*Ghr̥ita* is heavy to digest (*guru*) thus it is not advised to be given in *aama awastha* of disease. In diseases like *raktapitta*,<sup>28</sup> *gulma*,<sup>29</sup> *udara*,<sup>30</sup> *shotha*, medicated *ghrita* is advised to use before starting the treatment that is in the *sama awastha* of disease, to expel out excessive *doshas* from body (*virechanarth*) and ignite the digestive power (*agni*) thus helps in the assimilation of further medicines taken internally.

In *Pandu* , *snigdha* and *tikshna* treatment is advised<sup>31</sup> thus *ghrita* medicated with strong purgative medicines are used. In *pandu*, *udara*, *kushta doshas* are expected to be expelled out from body without harming the strength of patient. By using *ghrita* medicated with strong purgative medicine helps to expel out increased *dosha* from body and helps to preserve strength of patient as *ghr̥uta* is best unctuous substance (*snehottama*)<sup>32</sup>. It also helps to bring *doshas* to their normal properties.

*Acharyas* have advised to take all kind of medicines along with another dravya having opposite but not against the properties of medicinal drug called as *anupana*. It will help to enhance the effect of drug, helps to take medicine to the desired site of action. In case of *ghrita* intake, *acharyas* have advised to take *peyaa*, *madhu* (honey), *ushnodaka* (hot water), *yavkshar as anupana*. When *anupana* (after drug) is not explained, it is advised to take *ushnodaka* along with *ghrita*. It is observed that *anupanas* explained to take along with *ghrita* helps to saturates, nourishes, provide energy, increases bulk of the body, brings about completion, settles down the food taken, breaks down the food mass, produces softness, moistens, digests and helps in easy transformation and quick absorption of food.<sup>33</sup>

*Anupana for ghrīt sevā*<sup>34</sup>

<b>Vasa Ghrita( Va. Chi. 2/43)</b>	<b>Madhu</b>
<b>Dashamool Ghrita( Va.Chi.3/5)</b>	Manda
<b>Kshatouraskaadi Ghrita (Va. Chi. 3/90)</b>	Sathi Chawal
<b>Samsaktu Ghrita (Va. Chi. 3/107)</b>	Sattu
<b>Dadimaadi Ghrita (Va. Chi. 3/165)</b>	Yavakshar
<b>Anyaanya Ghrita (Va. Chi. 4/55)</b>	Yavakshar+ Saindhav Lavana
<b>Dashmoolsiddha Ghrita (Va. Chi. 4/14)</b>	Madhu
<b>Siddha Ghrita(Va. Chi. 5/15)</b>	Madhu
<b>Ashwagandhadi Ghrita (Va. Chi. 5/24-25)</b>	Sharkara + Ksheera
<b>Elaadi Ghrita(Va. Chi. 5/31)</b>	Ksheera
<b>Balaadi Siddha Ghrita (Va. Chi. 5/41)</b>	Saindhava Lavana
<b>Pushkaraadi Ghrita (Va. Chi. 6/31)</b>	Kanji + Saindhav Lavana
<b>sNilini Ghrita (Va. Chi. 14/55)</b>	Yavaagu + Man`d`a
<b>Triphlaadi Ghrita (Va. Utt.13/11)</b>	Sharkaraa + Madhu +Triphla Kashaya
<b>Sarvarognashak narsinha Ghrita (Va.Utt. 39/172-173)</b>	Nirmala Khan`d`a + Sharkaraa + Madhu

*Vagbhata samhita* mentioned that a good medicine is one which dose is less but still helps to eliminate *dosha* quickly from body, which is palatable, got digested easily and pacifies the disease. Similarly the medicine should not be sharp producing the side effects. It should not weaken the patient and should have pleasant colour, odour and taste. The appropriate use of *ghrita kalpanas* in desired conditions explained in *Vagbhata samhita* will produce such effects. Hence study concludes that before using *ghrita* for medicinal purpose its dose (*matra*), *anupana*, time of administration (*kala*), must be taken into consideration. *Ghrita* given in different time and in different doses acts differently.<sup>35</sup>

**References:**

- i. Charak samhita of Agnivesha. Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Shadvirechan shatashritiya adhyaya 4/7:67.
- ii. Shabda kalpadrum of Raja Radhakant Dev. Volume 2/64:69. Delhi: Nag publication.
- iii. Charak samhita of Agnivesha. Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Shadvirechan shatashritiya adhyaya 4/7:67.
- iv. Rasa-Bhaishajyakalpana Vigyan. Vd. Santosh kumar Sharma "Khandal". Jaipur: Publication scheme; 2006. Kalpana vigyan 11:349

- v. Charak samhita of Agnivesha. Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Snehadhyaya 13/13:199.
- vi. Charak samhita of Agnivesha. Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Snehadhyaya 13/13:199.
- vii. Sushruta samhita of Maharsi Susruta , Ayurveda Tattva Sandipika by Kaviraj Ambika Dutta Shastri. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Snehopayogic chikitsita adhyaya 31/8.ss
- viii. Sharangadhar samhita of Acharya sharangadhara, Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. madhyam khanda9/92:171.
- ix. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Snehadhyaya 13/52:205.
- x. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Snehadhyaya 13/53-56:205.
- xi. Charak samhita of Agnivesha. Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Snehadhyaya 13/41:203
- xii. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Snehadhyaya 27/231-232:411.
- xiii. Charak samhita of Agnivesha. Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Langhan bruhaniya adhyaya 22/4:309.
- xiv. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Sneha adhyaya13/27:202.
- xv. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Sneha adhyaya 13/26:201
- xvi. Ashtanghrdayam of Vagbhata, Sarvangasundara commentary by Arundatta and the Vidyotini hindi commentary by Atridev Gupta. Varanasi: Chaukhambha Sanskrit Orientalia; 2003.
- xvii. Charak samhita of Agnivesha, text with English translation and critical exposure based on Chakrapanidatta's Ayurved Dipika, Dr. Ram karan Sharma and Vd. Bhagawan Dash. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Sneha adhyaya 13/23-25:251.
- xviii. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Trimarmiya chikitsa adhyaya 26/165:651.
- xix. Ashtanghrdayam of Vagbhata, Sarvangasundara commentary by Arundatta and the Vidyotini hindi commentary by Atridev Gupta. Varanasi: Chaukhambha Sanskrit Orientalia; 2003. Nasya vidhi adhyaya 20/2:227.
- xx. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Annapana vidhi adhyaya 27/231:411.
- xxi. Ashtanghrdayam of Vagbhata, Sarvangasundara commentary by Arundatta and the Vidyotini hindi commentary by Atridev Gupta. Varanasi: Chaukhambha Sanskrit Orientalia; 2003.
- xxii. Charak Samhita of Agnivesha part 1 & 2, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi :Chaukhambha Sanskrit Pratisthan: 2003.
- xxiii. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Snehadhyaya 13/26:201.
- xxiv. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Apasmar chikitsa adhyaya 10/17:411.
- xxv. Ashtanghrdayam of Vagbhata, Sarvangasundara commentary by Arundatta and the Vidyotini hindi commentary by Atridev Gupta. Varanasi: Chaukhambha Sanskrit Orientalia; 2003.



- xxvi. Charak samhita of Agnivesha, Snehadhyaya 13/14. Yashawant Hindi commentary by Y.G.Joshi. Pune: Vaidyamitra prakashan; 2006.
- xxvii. Charak samhita of Agnivesha, Snehadhyaya 13/14. Yashawant Hindi commentary by Y.G.Joshi. Pune: Vaidyamitra prakashan; 2006.
- xxviii. Charak samhita of Agnivesha,. Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Rakttapitta chikitsa adhyaya4/87:135.
- xxix. Charak samhita of Agnivesha,. Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Gulma chikitsa adhyaya 5/70:153.
- xxx. Charak samhita of Agnivesha,. Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Udara chikitsa adhyaya13/27142:311.
- xxxi. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Pandurog chikitsa adhyaya16/116:410.
- xxxii. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Sneha adhyaya 13/13:199.
- xxxiii. Charak samhita of Agnivesha, Vaidyamanorama Hindi commentary by Acharya Vidyadhar Shukla and Prof. Ravi Dutt Tripathi. Varanasi: Chaukhambha Sanskrit Pratishthan; 2003. Annapanavidhi adhyaya 27/231:411.
- xxxiv. Ashtanghrdayam of Vagbhata, Sarvangasundara commentary by Arundatta and the Vidyotini hindi commentary by Atridev Gupta. Varanasi: Chaukhambha Sanskrit Orientalia; 2003.
- xxxv. Charak samhita of Agnivesha, Prof. Priyavrat Sharma. Varanasi: Chaukhambha Sanskrit Pratishthan; 1996. Annapana vidhi adhyaya27/325-326:223

