

# INTERNATIONAL JOURNAL OF UNANI AND INTEGRATIVE MEDICINE



E-ISSN: 2616-4558  
P-ISSN: 2616-454X  
IJUIM 2020; 4(2): 51-54  
Impact Factor (RJIF): 6.3  
Peer Reviewed Journal  
Received: 17-05-2020  
Accepted: 20-06-2020

## Faisal Manzoor

PG Scholar, Department of  
Amrazi Jild Wa Tazeeniyat  
(Skin and cosmetology),  
National Institute of Unani  
Medicine, Bangalore-91,  
Karnataka, India

## Unani perspective of *Baras* (Vitiligo) and its management in unani system of medicine: A review

### Faisal Manzoor

#### Abstract

*Baras* (Vitiligo) is an acquired pigmentary, multifactorial, Polygenic disorder, with a complex pathogenesis. It is a common depigmenting disorder has an estimated prevalence of 0.5-2% of the population worldwide. The disease is characterized by the selective loss of melanocytes which results in typical non scaly, chalky white macules. The main effect of *Baras* (Vitiligo) is in the form of psychological impact of the disease. In unani system of medicine (USM) *Bars* is caused due to weakness of *Quwat –e-Mughaiyrah wa Mushabbiha* (transformative faculty) of the skin and the liver. Besides these *Fasad-ud –Dam* (impairment of blood) and *Burudat –ud-Dam* (coldness of blood) also play an important role in aggravating *Bars*. The role of diet (restrictions and recommendations) are well documented in the classic unani literature in the management of *Baras* (Vitiligo). The Management of *Baras* (Vitiligo) involves *Tanqiya –e-Badan*. It is performed in three steps: administering *Munzij –e-Balgham* drugs till *Nuzj* appears followed by three *mushily* (Purges) and *Tabreed* (Cooling agents) after every *Ishal*.

**Objective:** At this time there is no effective pharmaceutical treatment for *Baras* (Vitiligo). Therefore, the major aim of this article is to summarize the evidence regarding the dietary measures and treatment approach of *Baras* (Vitiligo) in USM.

**Methodology:** Through ancient unani literature and journals related to the psychological effect, role of diet and management of *Baras* (Vitiligo).

**Conclusion:** Present review has been studied on the principles of *unani medicine* which concludes that diet and *unani drugs* plays vital role in the management of *Baras* (Vitiligo).

**Keywords:** *Baras*, vitiligo, USM, *Quwat-e- Mughaiyrah wa Mushabbiha*, *Fasad –e-Dam*

### Introduction

*Baras* (Vitiligo) is a disorder of pigmentation characterized by the presence of depigmented skin macules due to chronic and progressive loss of melanocytes from the epidermis. Localised depigmentation with a family history of the condition is found in one third of the patients<sup>1</sup>. Large population surveys have shown a worldwide incidence of 0.5-2%, with the disease beginning before the age of 20 in 50% of cases. In India the incidence among dermatology outdoor patients is estimated to be between 3-4 percent. Vitiligo commonly affects the face and extremities and is often immediately visible to others and hence provokes high level of distress associated with appearance concerns<sup>[2, 3, 4]</sup>. *Baras* (Vitiligo) is clinically characterized by depigmented macules, which are chalky or milky white. Sometimes, pigment loss is partial and occasionally 3 shades are seen in the same lesion (Trichrome). Macules have scalloped outline and forming geographical pattern on fusion with neighbouring lesion. Linear lesions often seen, due to koebners phenomenon. Several patterns of Vitiligo recognized<sup>5</sup>: Localised:-Focal (single or few macules in one anatomic area), Segmental-Lesions arranged linearly in a segment, Mucosal like lips and genitals, Lip-Tip (on the lips and finger tips), Generalised:-Acrofacial, Vitiligo vulgaris (most common) and Universalis<sup>6</sup>. The psychosocial impact of Vitiligo is comparable with other skin disorders like psoriasis and eczema. With the clinical guidelines, the main impact of Vitiligo is the psychological effect of the disease for example high level of emotional responses were reported, such as increased self-consciousness, lower self-esteem, higher level of perceived stigma and disability, anger, poorer quality of life overall and negative impact on sexual relationships<sup>[7, 8, 9, 10, 11]</sup>.

### Concept of (*Baras*) Vitiligo in Unani system of medicine

According to *Jalinoos* (Galen) as mentioned in the manuscript *Moalijat –e-Buqratiya*, the cause of *Baras* is the weakness of *quwwat-e- Mughaiyarahwa Mushabbiha* (Transformative faculty) in the organs<sup>[12]</sup>.

#### Corresponding Author:

#### Faisal Manzoor

PG Scholar, Department of  
Amrazi Jild Wa Tazeeniyat  
(Skin and cosmetology),  
National Institute of Unani  
Medicine, Bangalore-91,  
Karnataka, India

*Rabban Tabri* while describing the aetiology of *Baras* in his famous book *Firdous al-Hikmat* says: *Fasad –ud –dam* (impairment of blood) and *Burudat-ud –dam* (coldness of blood) are the main causes of *Baras*. If the digestive faculty of the body cannot digest the food properly, the blood of the whole body becomes impure. When this impurity occurs due to *Balgham* (phlegm) or coldness, it appears as *Baras* [13].

*Zakariya–Al-Razi (Rhazes)* has given a comprehensive description of this disease. Here are a few excerpts from his most esteemed work *Al Hawi* [14].

Sometimes *Bahaq Abyaz* (Vitiligo Alba) reaches a stage when grayish hairs grow on patches. To examine whether it is curable or not, affected areas are rubbed; if the patches do not turn red then prick the lesion, if whitish fluid comes out, the possibility of recovery is remote and vice versa.

*Bahaq* is like *Wazah* (leucoderma) and it does not penetrate as deep as does *baras*. In *baras* hairs also become grey along with patches, and this greyishness is due to phlegm.

According to *Razi* if white patches of *baras* do not turn red on rubbing or when instead of blood white fluid comes out on pricking them, the possibility of recovery is remote. If the white patches are limited and non-extensive and the color of the patches is yellow or reddish early cure can be expected. Conversely, when *baras* is extensive and widely spreading and where the affected areas become bloodless and the colour of the patches is cloudy, it is incurable. He also adds that the patches on the feet and head do not respond to treatment adequately.

*Shamoon* as quoted in *Razi's Al-Hawi* says: *Bars* occurs due to frequent use of such food articles that contain water in excessive quantity.

***Ibn-e- Sarabiyoona (as quoted in Razis Al Hawi) says:*** If the *Baras* spreads over a large portion of the body or when it becomes highly chronic or when milky fluid comes out on pricking the *baras* patch, it is not curable and vice versa.

*Al Majusi* in his masterpiece *Kamil al-Sana'ah* says: *Baras* is whiteness occurring in outer surface of the body. Sometimes it affects few organs and sometimes it affects all organs. Consequently whole body becomes white. The disease occurs due to increase of *phlegmatic humor* in the blood, and due to weakness in *Quwwat-e- Mughaiyirah* in the organ. As far as the symptoms are concerned, the organ becomes white, even hairs also turns white. If the skin is punctured with needle, the white fluid oozes instead of blood, there is no chance for cure.

When *Baras* becomes chronic the treatment is difficult. The primary step in treatment of this disorder is to restrict the intake of phlegm forming foods such as milk, fresh fish and cold wet edibles. Besides, this the patient should be given honey, Turbud, Ghariqoon, Shahm-e- Hanzal, Habb –un – Neel etc. [15]

***Ibn-e-Sina (Avicenna) in his medical encyclopedia*** [16]

The third factor is *Tashbeeh*, The power which converts the nutrients and gives them the form of tissue. In normal condition, This shape is perfect by all means according to the characteristics of that particular tissue, by its consistency color etc. Sometimes this function of *Ghazia* is deranged as seen in case of *Baras or Bahaq*, in both the instances the nutrient material reaches the tissue and is retained there but does not take proper form due to failure of this shaping

power.

In the above reference, *Avicenna* says that the defects lie at the tissue level in the function of *Quwwat-e- Mushabbeha*. Therefore due to failure of this power depigmentation occurs

*Daud Antaki* in his *Tazkira* opines about the treatment of *Baras* in the following words: It is known that the matter responsible for *Bars-e-Abyaz* (Vitiligo) is *Balgham* (Phlegm) and for *Baras-e- Aswad* is *Sauda* (Black Bile). Therefore it is essential that if the matter is solid or the season is winter, the matter should be dissolved by coctives and expelled out by purgatives.

*Hakeem Akbar Arzani* in his famous book *Tibb –e-Akbar* says *Bars* is a whiteness appearing on the skin [17]. *Hakeem Azam Khan* in his book *Ikseer –e- Azam* says *Bars* is a white patch which appears on outer layer on the body. It may occur on certain parts or may involve whole of the body and turns its colour white. This type of *Baras* is called as *Baras-e- Muntashir* (generalized Vitiligo) weakness in *Quwate Mughaiyirah* being its cause [18]. *Ibn-e- Hubul* in his famous book *Kitab al Muktarat* describes *Baras* in the following words: If *Baras* is in early stage and has not spread completely over the body, the patient should be given decoction of roots with *julanjabeen* for some days followed by purgation with *Ayaraj-e- Feqra* and *Ghareeqoon* [19]. *A.H Jurjani* in his book *Zakheera Khawarzam shahi* says that *Baras* is caused by accumulation of *Balgham –e- Ghaleez* in the blood, *zoof –e- Quwat –e- Mughaiyirah of skin, Zoaf –e- Hazm –e- salis, Akhlat –e- Fasida Sue Mizaj Barid* of the organ [20]. *ibne-Rushd*, the author of *Kitabul Kulliyat* described that *Baras* appears due to derangement in the function of *Quwat-e-Ghazia* and weakness of *Quwat –e- Hazima*. In this condition nutrients reach the tissues and are retained there, but do not take the proper form due to failure of these *Quwa* [21].

### Role of Diet in *Baras* (Vitiligo)

The role of diet (restrictions and recommendations) is well documented in the classical unani literature in the management of various diseases. *Baras* being a metabolic derangements is influenced by many factors, such as; social, psychological, metabolic, diet and several other predisposing factors. Based on the clinical experience *Unani physician* have documented the guidelines for diet (restrictions and recommendation). The diet with hot properties should be used. Cold and moist foods such as fish, milk, and milk products have to be avoided: *Baras* occurs due to continuous use of such food articles which contain water in excessive quantity. *Hippocrates* had restricted milk and its products and has recommended use of meat and birds flesh. He was of the opinion that the patient of *baras* should not take food unless there is need. *ibne Sarabiyoona* has restricted the cold diet and moist foods like fish, milk, moist vegetables and fruits He also advised to eat such food which produces *hot and dry temperament*. *Majusi* was of the opinion that patients of *baras* should not give diet which produces *Buroodat* in the body [12, 14, 15].

### Diagnosis [5, 6]

- The diagnosis of the Vitiligo is usually based on clinical examination.
- However, in the early stage or in fair skinned patients Woods lamp, a portable ultraviolet device which emits

long wave ultra violet A (365nm) can help to diagnose Vitiligo.

- Presence of leucotrichia.
- Presence of Koebners Phenomenon.
- Prediction for the sites of trauma.

### Usool –e-Ilaj (Principles of Treatment)

There is a vast description of the management of *Baras* in the classical *unani literature*, and the principles of treatment of *Baras* are based on *Ilaj bil Tadbeer*, *Ilaj bil Ghidha* and *Ilaj bil Dawa*. In *Ilaj bil Tadbeer*, Psychotherapy is given to assure the patient for its non-contagious character and building self-confidence in patient. In pharmacotherapy, most of the unani physician advised initially the treatment with *Tanqiya –i-Badan* (Removal of harmful material from the body)

*Baras* is a chronic disease and usually caused by excessive accumulation of *Balgham e Ghaleez* therefore, all the *unani physicians* are of the opinion that its treatment should be started with *Tanqiya Badan* (Removal of morbid material from the body) through *munzij* and *mushil-e-balgham*. It is achieved by three steps:

- a) Use of *Munzijat –e-Balgham* like *Beekh –e-Badyan* (root of *Foeniculum vulgare* Mill), *Beekh –e-Karafs* (root of *Apium graveolens*), *Maveez Munaqqa* (*Vitis vinifera* Linn), *Anjeer Zard* (*Ficus carica* Linn) etc.
- b) Use of *Mushilat –e- balgham* like *Zanjabeel* (*Zingiber officinalis*), *Barg-e- Sana Makki* (leaves of *cassia angustifolia* vahl), *Turbud mujawwaf* (*Operculina turpethem* Linn).
- c) *Tabreed –e-badan* by the use of *Mubarridat* like *Laub –e-Bahidana* (mucilage of *Cydonia oblonga* Mill), *Sheerae Unaab* (juice of *zizyphus vulgaris*) etc.

An appropriate dose of *Munzij –e-Balgham* is administered till *Nuzj* appears (usually for 2-3 weeks), then three *Mushils* (purges) alternated with three *Tabreeds* (cooling agents) should be given.

*Hakeem Azam Khan* in his book *Ikseer-e- Azam* have quoted the references of various physicians those have advocated the *Munzij* and *Mushil* therapy in the management of *Baras* (Vitiligo) [17].

*Dawood Antaki* wrote in his book *Tazkira* that treatment of *Baras* has to be started by combination and expulsion of diseased material by using *Munzij* and *Mushil* therapy followed by treatment with food and medicine of *hot temperament* [22].

*Abu Sahal Masihi* was of opinion that treatment of *Baras* should be initiated by drugs of hot and *dry temperament* and by concoction of diseased material and expel it out by using *Mushil advia*.

*Avicenna* and *ibne-e- Ilyas* has also advocated *Munzij* and *Mushil* therapy in the management of *Baras* [16].

*Raban Tabri* not only advocated the *Munzij* and *mushil* therapy to expel out the diseased material from the body, he had further emphasized to nourish and change the local temperament of the depigmented macule [12]. Even today it is experimentally evident that many factors play pivotal role in the causation of disease activity or in makes the lesion more resistant to therapy, autoimmunity or oxidative stress. Overcoming oxidative stress and local immune suppression are the two major breakthrough in the management of Vitiligo, which is possible by systemic and topical application of medicine.

*Zakariya Razi* has advocated several means of external procedure that are beneficial for the ailment. According to him, application of sunlight exposure to the patch in early stages *Baras* and *bahaq* or multiple pricks by needle on patches, use of diuretics (reduces the plasma of blood) cures the *Baras* [14].

### Ilaj (Treatment)

Following single and compound drugs can be used for the treatment of Vitiligo:

**Panwar (*Cassia tora*):** A small plant growing on dry soil in Bengal and throughout the tropical part of the india mainly leaves, seeds and roots are used. Both leaves and roots contain a glucoside resembling chrysophanic acid. Leaves contain a principle similar to cathartin and a red colouring matter and mineral matters “Emodin glucoside”. Both leaves and seeds constitute a valuable remedy in skin disorders like in tumours, leprosy, psoriasis, Vitiligo and fungal infections. Therapeutically it is used as *Fasa –ud-Dam, Juzam, Bars, Qoba, Bawaseer*. The Temperament of the drug is Hot<sup>20</sup> Dry<sup>20</sup>, Action –*Mushil –e-Balgham, Mushil –e- Sauda, Jali, Musaffi –e-Dam*. It is one of the main ingredient of *sufoof-e-Bars*. The dosage of the drug is 1.7-3.6g.

**Anjeer (*Ficus carica* Linn):** It is cultivated in north india and fresh figs are to be found there. Dried fresh receptacles are used. It constituted Protease, amino acid, tyrosin, enzyme cravin, Lipase, Protease. The fleshy receptacle fig contains grape sugar, gum, fat and salts The temperament of the drug is Hot<sup>10</sup> Moist<sup>20</sup>. Its main action are *Mulatif, Mohalil-e-Waram, Munzij, Mulaiyin*. It is therapeutically used as *Warm –e-Tihal, Sara, Zeeq-un-Nafas*. The daily requirement of the drug is 10-12 number (dry).

**Chaksu (*Cassia absus* Linn):** The drug consists of dried seeds. An erect annual herb found throughout the india from Himalaya to south coast and everywhere in the tropics of old world. It contains Proteins, alkaloids, fat, sugars, tannins, and mucilage. Its temperament is Hot<sup>20</sup> Dry<sup>20</sup>. The main action are *Habbis –ud-Dam, Mohalil, Qabiz, Jali, Musaffi –e- Dam*. The drug is therapeutically used as *Ramad, Nuzool-ul Ma, Baras, Juzam*. Its daily requirement is 2-3 g.

**Babchi (*Psoralea corylifolia*):** The drug consists of dry ripe fruits. It is an erect 0.3-1.8 m high annual herb distributed throughout the India, found commonly in uttar pradesh and Maharashtra. It consists of essential oil, fixed oil, psoralin, psoralidin, isopsoralen and bukuchiol. Its main action are *Mussafi –e- Dam, Mohammir-e-Jild, Muqawwi-e- Meda, Qatil-e- Deedan-e- Ama, Mulaiyin*. The drug is therapeutically used in *Fasad –ud- Dam, Juzam, Baras, Bahaq Abyaz*. The daily dosage of the drug is 3-5g.

**Zanjabeel (*Zingiber officinalis*):** Drug consists of dried rhizome of *zingiberacea* family. *Zanjabeel* yielding is widely cultivated in india. It consists of essential oil, pungent constituents (*gingerol and shogaol*) resinous matter and starch. The drugs main action are *Kasir –e- Riyah, Hazim, Munaffis-e- Balgham, Jali*. It is therapeutically used as *Nafkh –e- Shikam, Waj-ul- Mufasil, Waj-ul- Meda, Zof –e- Isteha, Waj –ul- Qatan, Saul, Zeequn nafas, Sailan –ur-*

Reham. The dosage of the drugs is 1-2 g

**Majoon Atrilaal:** It consists of following drugs:-Atrilaal (*Ammi majus*),Aqraqqrha(*Anacyclus pyrethrum*), Turbud safaid(*Operaculina pyrethrum*), Sonth (*Zingiber officinalis*), Shehad(*Honey*).*Majoon Atrilaal* is precisely mentioned in *qarabadeen –e-Azam* and *Alqarabadeen* for the treatment of (*Baras*)Vitiligo.The chief ingredient of *Majoon Atrilaal* is Atrilaal,which grows throughout the valley as a weed. *Ibne –e-Baitar* in his book *Mufaridat –ul-Adwiya* described the treatment of Bars with the seeds of *Atrilaal* and sunlight [23, 28].

The commonly used compound unani formulation for the treatment of *Baras* (Vitiligo) are *Roghane Babchi*, *Roghane Kameela* for topical application and *sharbate unnab*, *Majoon ushba*, *Itrephal shahitra*, *Sofoofe Baras* for oral administration [29, 30].

### Conclusion

*Baras* is an acquired skin disorder characterized by well-defined areas of complete epidermal depigmentation. Although not life threatening, it has considerable effects on the psychological well-being of patients. It has been suggested that Vitiligo patients suffer from low esteem and poor body image which may cause a lower quality of life. *Unani physicians* claimed and practiced safe and effective management in various dermatological disorders like *Baras*. Treatment is based on the holistic approach of *munzij wa mushil* therapy along with topical application of *jali*, *Muhammir*, *Muhalil*, and *Musakkhin* drugs. Thus *Unani medicine* is preferred over contemporary medicine in the treatment of these refractory ailments.Single and compound drugs are such pharmacological preparations which has been reported to be effective in *Bars*. Role of Diet also plays a vital role in the prevention and management of Vitiligo.

### References:-

- Jones RM. FRCP, PhD, PCME ABC of Dermatology. 6<sup>th</sup> ed Dermatology Consultant: Kings college Hospital, Denmark Hill, London, UK
- Howitz J, Brodthagen H, Schwartz M, Tomson K. Prevalance of Vitiligo: epidemiological survey on the Isle of Bornholm, Denmark. Arch Dermatol. 2017; 113:47-52.
- Mehta N, Shah KC, Theodore C *et al.* Epidemiologic Study of Vitiligo in surat area, south Gujrat Indian J Med Res. 2018; 61:145-154.
- Majumdar PP, Nordlund JJ, Nath SK. Pattern of familial aggregation of Vitiligo. Arch Dermatol. 2018; 129:994-998.
- Khanna N. Dermatology and Sexually Transmitted disease. 5<sup>th</sup> ed.New Delhi: Elsevier Publication, 2016.p
- Jindal S. Review of Dermatology. 3<sup>rd</sup> ed. New Delhi: Jaypee Brothers, 2019.
- Gawkrodger DJ, Ormerod AD, Shaw L, Mauri-Sole I, Whitton ME *et al.* Vitiligo:Concise evidence based guidelines on diagnosis and management. postgrad Med J. 2010; 86:466-471
- Ongena K, Van Geel N, De Schepper S, Naeyaert JM. Effect of Vitiligo on self –reported health –related quality of life. Br J Dermatol. 2005; 35:736-739.
- Talsania R, Hunt J, Webb TL, Thompson AR. starting to develop self –help for social anxiety associated with Vitiligo: using clinical significance to measure the potential effectiveness of enhanced psychological self –help. Br J Dermatol. 2014; 171:332-337.
- Schmid–Ott G, Kunsebeck HW Jech TE, S himshoni R, Lazaroff I *et al.* Stigmatization experience coping and sense of coherence in Vitiligo patients. J Eur Acad Dermatol Venerol. 2017; 21:456-461.
- Hill-Beuf A, Porter JD. Children coping with impaired appearance: Social and psychological influences. Gen Hosp Psychiatry. 2017; 6:294-301
- Tabari Ahmad Bin Mohammad. Moalijat-e-Buqratia (Urdu version), vol. 2, pp. 199-200. Central Council for Research in Unani Medicine, New Delhi, 1997.
- Tabari Abul Hasan Ali Bin Sahl Rabban. Firdausul Hikmat (Urdu version), vol. 1, p. 825. Idaria Tarjmantibb, Karachi, Pakistan, 1996.
- Razi Abu Baker Zakaria. Kitab-ul-Hawi Fit Tib (Arabic version), vol. 23. 72-75. Dairatul Marif, Osmania University, Hyderabad, 1970.
- Majoosi Ibn-al-Abbas. Kamil-us-Sanah (Urdu version), vol. 1, p. 196. Munshi Nawal Kishore Press, Lucknow, 1889.
- Ibn-e-Sina Bu Ali Shaikhur Rais. Al Qanoon Fit Tib (Urdu version), vol. 4, pp. 389-391. Munshi Nawal Kishore Press, Lucknow, 1906.
- Azam Khan Hakim Mohammad. Aksir-e-Azam (Persian version), vol. 4, pp. 475-487. Munshi Nawal Kishore Press, Lucknow, 1885.
- Arzani Mohd Akbar. Tibb-e-Akbar, vol. 2, p. 731. Matba Islamia, Lahore, 1915.
- Baghdadi Ibn Hubal. AH Kitabul Mukhtarat Fit Tib (Arabic version), vol. 4, p. 143. Dairatul Maarif, Osmania University, Hyderabad, 1364.
- Ibne Rushd. Kitabul Kulliyat (Urdu translation). ed 2. New Delhi CCRUM, 1987, 109-10.
- Jurjani AH. Zakheerae Khwarzam Shahi (Urdu translation by H.H.Khan) vol.2 part 8Lucknow: Matba Munshi Nawal Kishore. 1903; 18:19
- Antaki Shaik Daood Alzarir. Tazkira Oo-lul-Albab (Arabic version), 4<sup>o</sup> edition, vol. 2, p. 36. Azharia Press, Cairo, 1924.
- Nadkarni KM. Indian Materia Medica. 3<sup>rd</sup> ed. Mumbai: Popular Prakashan Private Limited, 2010, 282-291.
- Kabeeruddin M, Makhzan –ul-Mufaridat, Idara Kitab –us-Shifa, Koccha chelan, Darya Ganj New Delhi, 2002, 45-83.
- Ghani MN. Khazayinul Advia New Delhi:Idara Kita –us-shifa; Pp 279,316,474,682,766
- National formulary of Unani Medicine (2007), Part I Vol 1, Dept of AYUSH, Ministry of Health and family welfare, India PP; 13-14,88-89
- National formulary of Unani Medicine (2007), Part I, vol 11, Dept of AYUSH, Ministry of Health and family welfare, India Pp; 11-12,31-32,85-86
- Chopra RN, Nayer SL, Chopra IC. Glossary of Indian Medicinal Plants. CSIR, New Delhi. Kirtikar K. R. and Basu B. D. 1993 Indian Medicinal Plants, 1-4. Lalit Mohan Bose, Allahabad, 1985, 32-53.
- Allama Kabeeruddin. Bayaze Kabeer. Dehli: Idara Kitabush shifa, 2010, 24.
- Syed M. Hamdard Pharmacoeppia of Eastern Medicine. Dehli: Sri Sataguru Publication, pp 68, 133, 143, 155, 186, 206, 261, 272, 278, 195.