

INDIAN PLAGUE COMMISSION, 1898-99

INDICES TO THE EVIDENCE,

ALSO

GLOSSARY, MAPS, AND SUMMARY

OF THE

REPORT AND APPENDICES.

VOL. IV.

Presented to both Houses of Parliament by Command of His Majesty.



L O N D O N :

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Mr. P. R. Cadell, I.C.S., further examined	"	"	25,011-25,141	"	274-287
Mr. E. L. Cappel, I.C.S., further examined	"	"	25,142-25,165	"	287-289
Sardar Khan Bahadur Muhammad Yakub Khan	"	"	25,166-25,207	"	289-290
Khan Bahadur Bomanji Byramji Patel	"	"	25,208-26,247	"	290-291
Dr. U. L. Desai	"	"	25,248-25,296	"	291-293
Mr. C. H. Cayley, M.B.	15th March 1899	"	25,297-25,410	"	293-295
Mr. Sorabji Manekji Damaon-Valla	"	"	25,411-25,461	"	295-297
Mr. Shrinivasa Rau, M.B., further examined	"	"	25,462-25,478	"	297
Major J. Crimmin, V.C., I.M.S., further examined	17th March 1899	"	25,479-25,506	"	298-304
Mr. J. H. Du Boulay, I.C.S., further examined	"	"	25,507-25,661	"	305-310
Lieutenant-Colonel T. S. Weir, I.M.S., further examined.	"	"	25,662-25,785	"	310-315
Lieutenant H. B. Firth, I.S.C.	"	"	25,786-25,825	"	315-316
Major W. L. Rende, R.A.M.C., further examined	20th March 1899	"	25,826-25,875	"	316-320
Mr. S. R. Arthur, I.C.S., further examined	"	"	25,876-25,891	"	320-321
Lieutenant-Colonel E. Lawrie, I.M.S., further examined.	"	"	25,892-25,925	"	321-322
Major W. B. Bannerman, I.M.S., further examined	"	"	25,926-26,952	"	322-323
Dr. D. Galeotti, further examined	"	"	25,953-26,073	"	323-327
Mr. C. C. James	"	"	26,074-26,117	"	327-229
Captain C. G. Spencer, R.A.M.C.	21st March 1899	"	26,118-26,184	"	329-331
Lieutenant S. R. Douglas, I.M.S.	"	"	26,185-26,304	"	331-337
Lieutenant H. J. Walton, I.M.S.	"	"	26,305-26,371	"	337-340
Lieutenant W. G. Liston, I.M.S.	"	"	26,372-26,434	"	340-346
Surgeon-General R. Harvey, I.M.S., further examined	22nd March 1899	"	26,435-26,442	"	347-348
Mr. W. M. Haffkine, C.I.E., further examined	"	"	26,443-26,535	"	348-353
The Hon. Sir Andrew Wingate, I.C.S., K.C.I.E., further examined.	"	"	26,536-26,568	"	353-358
Surgeon-General C. Plank	6th May 1899	London	26,569-26,589	"	358-360
Surgeon-Colonel J. Richardson	"	"	26,590-26,634	"	360-361
Surgeon-General J. Cleghorn, I.M.S.	"	"	26,635-26,811	"	361-367
Dr. W. J. Simpson	"	"	26,812-27,018	"	368-379
Captain H. D. Mason, R.A.M.C.	20th May 1899	"	27,019-27,195	"	380-388
Major R. W. S. Lyons, I.M.S.	"	"	27,196-27,318	"	389-392
Dr. Klein, F.R.S.	"	"	27,319-27,415	"	393-396

GLOSSARY
OF
VERNACULAR TERMS
USED IN THE
EVIDENCE AND APPENDICES.

ABKARI - - -	The department entrusted with the administration of the law relating to the manufacture and sale of intoxicating drugs and liquor.	BARA - - -	Great, important, chief, as "Bara Doktor Salib," "the Chief Medical Officer."
ACHARY - - -	A sect of Brahmans who assist in the performance of the obsequies of the dead.	BARIA - - -	The name of a caste.
ABRO - - -	The name of a caste.	BARODIA - - -	The name of a caste.
ADHA KUMBH - - -	An important religious festival held on particular occasions at Hardwar, in the North-Western Provinces, and attended by very large numbers of Hindus.	BAROT - - -	The name of a caste.
AGARIA - - -	The name of a caste.	BATSHIRERJWAR - - -	A fever said to be found in Bengal, which "is brought on by swelling or subsequent enlargement of the glands. . . The seasons of the fever are generally the winter and rains." (Vol. I., p. 521, s. 11.)
AHIR - - -	The name of a caste the members of which are principally cowherds and agriculturists.	BAZAR - - -	Market place, quarter in which the shops of traders are situated.
ALARI - - -	The name of a caste of metal moulders.	BEEDEE - - -	The name of a caste.
AMALDAR - - -	A man in authority, a manager, an agent; in Mysore, the chief native officer of a taluka (q.v.).	BETEL NUT - - -	The fruit of the <i>Areca catechu</i> , which, prepared with lime and other ingredients, is wrapped up in the leaf of the <i>piper betel</i> and chewed.
AMAVAS - - -	The conjunction of the sun and the moon; a Hindu religious festival held on the day of the new moon.	BHAGAR - - -	The name of a caste.
AMIL - - -	The name of a caste.	BHANDARI - - -	The name of a caste in Bombay of which the members are for the most part toddy drawers; a steward.
ANAWLA - - -	The name of a caste.	BHANG - - -	An intoxicating preparation made for drinking from the leaves of the Indian hemp (<i>cannabis sativa</i>).
ANNA - - -	A coin of the Government of India currency, the sixteenth part of a rupee (q.v.).	BHANGI - - -	A sweeper; the name of a caste of which the members are employed as sweepers and scavengers.
ARJA - - -	The name of a caste.	BHANSALI - - -	The name of a caste.
ATIT - - -	The name of a caste of Hindu ascetics and holy men.	BHARBHUJA - - -	A grain parcher; the name of a caste of grain parchers.
AWALKARKUN - - -	The chief karkun or clerk in a Mamlatdar's (q.v.) office.	BHATELI - - -	The name of a caste.
AYAH - - -	A lady's maid or female attendant on children.	BHATIA - - -	The name of a caste of which the members are largely engaged as traders, shopkeepers, and clerks.
BABU - - -	A writer or clerk.	BHAYSAR, OR BHAVSAT - - -	The name of a caste.
BAID (BAIDYA) - - -	A medical practitioner who follows the Hindu system of medicine.	BHIKSHUK - - -	A beggar, or mendicant, who lives on alms.
BAINAGI - - -	The name of a class of Hindu ascetics who live on alms.	BHIL - - -	One of the aboriginal hill tribes in the north of the Deccan.
BAJANIA - - -	The name of a caste.	BHISTI - - -	A water carrier.
BAJRA (BAJRI) - - -	A cereal grain or millet, the <i>penicillaria typhoidea</i> .	BHOI, BHOJI - - -	The name of a caste of which the members are employed chiefly as fishermen and bearers or porters.
BAKALI - - -	The name of a caste.	BHUTIA - - -	A native of Bhutan.
BAKKAL - - -	A trader or shopkeeper.	BHYA - - -	In Southern India signifies a man from Northern or Central India outside Bombay.
BALUCHI - - -	A native of Baluchistan.	BIGAREE (BEGAR) - - -	An unskilled labourer, originally a forced labourer.
BAN - - -	A kind of grass (<i>Saccharum munja</i>) of which the fibre is used for making ropes.	BORAH - - -	A Musalman community of traders and bankers.
BANDAR - - -	Dock, jetty, wharf, landing place.	BRAHMAN - - -	One of the sacerdotal caste of the Hindus, who now engage not only in priestly duties but also to a large extent in professional and business employments.
BANIA - - -	See Banniah.	BRAHMO SAMAJ - - -	The new theistic church in India, which, while not accepting as its basis of belief any book written by man, respects the Vedas, recognises only one Supreme God, and discourages the observance of ceremonies, idolatry, and caste restrictions.
BANJARA - - -	The name of a caste of which the members for the most part live on the profits of the carriage of goods from place to place on bullocks belonging to them.		
BANNIAH - - -	The name of a caste of which the members are for the most part traders in grain and provisions, money-lenders, and small shopkeepers; the word is often used to signify Hindu shopkeepers or money-lenders without special reference to caste.		

BUDMAH (BADMAH)	- A man of bad character, a disreputable person, a criminal.	CHOLAM	- A grain of the millet kind (<i>sorghum vulgare</i>).
BUND	- A masonry or earth dam or bank generally used for the confinement of water in tanks and other suitable places.	CHUA	- A sort of grain, amaranth.
BURUD	- The name of a caste of basket makers.	CHUNAM	- Lime-cement, used for making cement floors, &c.
BUSTEE (BASTI)	- A group of thatch and mud houses, usually with a tank in the centre, constituting a native village; a group of thatch and mud houses situated in the midst of the better class of houses in Calcutta.	CHUPPAR	- See Chappar.
CHABUTRA	- A raised platform, usually of masonry.	COIR	- Coconut fibre, used for the manufacture of mats, ropes, &c.
CHADDAR	- A sheet or cloth; the cloth worn by women as an outer wrap or cloak, covering the head and reaching to the ankles.	COLLECTOR	- The chief civil officer of a District or administrative territorial unit.
CHAMAR	- The name of a low caste of which the members work in hides and leather and are engaged in menial service.	COLLECTORATE	- A district or subdivision of a Province, under the charge of a Collector or Deputy Commissioner.
CHAMADIA	- See Chamar.	CONJEE	- Water strained after boiling it in rice or sago, &c.
CHANDAN	- Sandal-wood.	COOLE	- An unskilled labourer.
CHANDIO	- The name of a caste.	CRORE	- Ten millions, a hundred lakhs (<i>q.v.</i>).
CHANNA	- Cakes of cowdung, used as fuel.	CUTCHA	- See Kachcha.
CHAPPAR	- A hut or shelter of thatch or grass.	CUTCHEE, CUTCHI	- A native of the Cutch State.
CHAPPATTI	- A thin cake of flour and water without leaven, baked or toasted over an open fire.	DABGAR	- The name of a caste of which the members generally are workers in leather.
CHAPRASI	- A messenger or orderly of a Court or officer, who wears on a belt a "chaprass" or plate, as a mark of his office.	DADU	- The local name at Hardwar for a cold wind that blows down the Ganges valley at night.
CHARI	- The stalks of bajra (<i>q.v.</i>) or jawar (<i>q.v.</i>) used as fodder or as thatching material.	DAHGAR	- The name of a caste.
CHARFOY	- A native bed, usually having strings stretched inside a wooden frame.	DAHIWALA	- A seller of curdled milk or curds.
CHATRI	- See Khatri.	DAK BUNGALOW	- A rest house maintained by Government for the use of travellers.
CHATTI	- An earthen pot generally used to hold water.	DAKHAUTI	- A Hindu festival.
CHAUDRI	- A headman; the head or representative of a caste, profession, or trade, in a town, or of a gang of coolies; in Bombay, the assistant to the Patel (<i>q.v.</i>) in a village.	DAL	- The pea of <i>mung</i> (<i>phaseolus mungo</i>), <i>urad</i> (<i>dolichos pilosus</i>), <i>arhar</i> (<i>cajanus flavus</i>), and some other pulses; dal water is water in which dal has been boiled.
CHAULAN	- The name of a clan of Rajputs.	DANDI	- A litter, a kind of palankin.
CHAUK	- A square or courtyard in a town or house.	DARBAR	- The Government of a Native State.
CHAUKI	- A police or customs station, a guard's post.	DAROGHA SAPAI	- An inspector or overseer of the conservancy establishment of a town.
CHAUKIDAR	- A watchman, a village servant employed to perform duties of watch and ward and other miscellaneous duties, a policeman.	DARZI	- A tailor.
CHAYDI	- The public meeting place or hall of a village.	DASERRA (DASAURA)	- An important Hindu festival, celebrated in the month of Asvaj (September—October), at which the victory of Rama over Ravana is commemorated.
CHAWL	- A house let in tenements, a large building divided into small rooms let separately.	DAXINI	- See Deccani.
CHIMBA	- The name of a caste of which the members are generally washermen.	DECCANI	- A native of the Deccan, or table land between the Eastern and Western Ghats (<i>q.v.</i>).
CHINA	- A variety of millet (<i>panicum miliaceum</i>).	DEGCHI	- A pot or caldron.
CHIPPI, CHIPPA	- The name of a caste of which the members for the most part are engaged in the business of stamping patterns on cloth.	DEPUTY COMMISSIONER.	- An officer in non-regulation Provinces corresponding to the Collector (<i>q.v.</i>) in regulation Provinces.
CHIT	- A memorandum, note, or letter.	DESH	- In Bombay, the open country as opposed to the mountainous country; a desh village therefore is a village on the flat open Deccan as opposed to the Konkan, or hilly country.
CHOKRA	- A small boy, a youth.	DHAI	- A wet nurse, an accoucheuse.
		DHAN	- Rice in the husk.
		DHANGAR	- An owner of flocks and herds, the name of a caste of which the members generally are shepherds.
		DHARAMSALA	- A building set apart by Hindus as a free rest house for travellers and pilgrims.

- DHARALA** - - Literally "the arm-bearing class," applied in Gujarat to Rajputs, watchmen, and others who bear arms.
- DHEBRA** - - The name of a caste of which the members generally are sellers of dried fish.
- DHEBARWAD** - - The quarter of a town occupied by Dhebras.
- DHERS** - - The name of a low caste in Gujarat which corresponds to the Mahar (*q.v.*) caste in the Mahratta country. The members of the caste are tanners and do menial service generally.
- DHOBI** - - A washerman.
- DHOBI GHAT** - - A place in a stream, tank, or other place where water is available, used by dhobis for the washing of clothes.
- DHODIA** - - The name of a forest tribe of low-caste Hindus.
- DHOTEE (DHOTI)** - - A loin cloth generally worn by Hindus, carried round the waist and between the legs and fastened behind.
- DIWALI** - - A festival in honour of Lakhshmi, the Goddess of Fortune, celebrated by the Hindus in mid October; during this festival houses are generally illuminated and gambling prevails.
- DIWAN** - - A minister, a chief officer of a Native State.
- DEHLA** - - A courtyard with houses round it.
- DELI** - - *See* Dehla.
- DISTRICT** - - *See* Collectorate.
- DOM, DOME** - - The name of a low caste of Hindus, who have no objection to touching corpses and are employed to assist at post-mortem examinations and in connexion with funerals as corpse bearers, &c.
- DOOBAR** - - The name of a caste.
- DOOLY (DULI)** - - A native litter, an ambulance.
- DUBASH** - - A stevedore.
- DUBLA** - - The name of a Gujarat forest tribe.
- DURZI** - - *See* Darzi.
- DURWAN** - - A doorkeeper.
- FAKIR (fem. FAKIRIN).** - - A mendicant who leads a "holy life."
- GACHERIA** - - The name of a caste.
- GADI** - - The name of a caste.
- GAIKWAB** - - The ruler of the Native State of Baroda.
- GAIKWARI** - - Belonging to, or a native of, the Native State of Baroda.
- GALA** - - The name of a caste.
- GALI** - - A narrow passage between two houses, a drain.
- GANCHI** - - *See* Ghanchi.
- GANESH** - - The Hindu God of Wisdom, usually represented with an elephant's head.
- GANJA** - - An intoxicating preparation made for smoking from the hemp plant (*cannabis sativa*).
- GAOLI** - - A cowkeeper; the name of a caste of which the members generally are cowherds.
- GAON** - - A village.
- GABHWALI** - - A native of Garhwal, a district of the North-Western Provinces situated in the Himalayas.
- GARI** - - A wheeled conveyance, a carriage.
- GARODA** - - The name of a caste.
- GAULI, GAWLI** - - *See* Gaoli.
- GHANCHI** - - The name of a caste of oil pressers.
- GHANCHIWAD** - - The quarter of a town occupied by Ghanchis.
- GHARA** - - An earthen water pot.
- GHARRIWALA** - - The driver of a conveyance for hire. *See* Gari.
- GHAT** - - A pass or steps over mountains or down to or across rivers. Burning ghats are places generally on the banks of rivers at which the dead are burnt. Dhobi ghats are places used by washermen for the washing of clothes. The Ghats (the Sahyadri Mountains or Western Ghats) are the most important range of mountains in the peninsula of India proper, this wall of "stairs" or passes to the inland plateau running along the West coast from the Tapti River to Cape Comorin parallel to the sea at a distance of from 40 to 50 miles from it, with an average elevation of about 1,800 feet, though single peaks rise to double that height.
- GHEE (GHI)** - - Clarified butter.
- GHORAWALA** - - A groom, a sais.
- GIRANA** - - A section of the Brahman caste.
- GIRASIA, GIRASIA MAULE SALAM.** - - The name of a class of people in Gujarat who have land grants and certain special rights and privileges, granted in commutation of a form of blackmail formerly levied by them.
- GOANI** - - A native of Goa.
- GODOWN** - - A warehouse or storeroom.
- GOHAL** - - The name of a clan of Rajputs in the Dutch State.
- GOLA ROG** - - Literally "the disease with a lump or bubo," the name by which the endemic plague of Kumaun is locally known.
- GOLA** - - The name of a caste of which the members are generally rice-pounders.
- GOLAWAD** - - The quarter of a town occupied by Golas.
- GOONDEE** - - The name of a caste of religious musicians.
- GOSAIN** - - A Hindu religious mendicant or ascetic.
- GOSHA** - - Retirement, privacy; the seclusion of women.
- GOWLI** - - *See* Gaoli.
- GRAM** - - Pulse, the product of the *Cicer arietinum*.
- GRANTH** - - The Scriptures or Sacred Book of the Sikhs.
- GRANTHI** - - A reader or reciter of the Granth, a Sikh priest.
- GUJAR** - - The name of a caste in Upper India, of which the members are chiefly engaged in agriculture and the keeping of cattle; in the Mahratta country the name is used to signify a member of a caste of Gujarat money-lenders and traders.
- GUNDI (GANDI)** - - A druggist.

GUNNY BAGS	• Rough bags made from jute for the storage and transport of grain and merchandise.	JHINGORA	- - A kind of grain, a variety of panicum.
GUR	- Unclarified sugar, the juice of the sugar cane boiled into cakes.	JHINWAR (fem. JHINWARI).	- The name of a caste of which the members are principally fishermen and carriers.
GUSAI	- See Gosain.	JHOPDI (JHOMPRI)	- A grass or thatch hut or shed.
HANJAM	- A barber.	JINGAR	- The name of a caste of which the members generally are saddle makers.
HAKIN	- A native medical practitioner, as a rule a follower of the Yunani system of medicine.	JOLAHA	- See Julaha.
HALA	- The name of a clan of Rajputs in the Cutch State.	JOWARI	- See Jawar.
HALALKHORES	- A term used in Bombay for scavengers.	JULAHA	- The name of a caste of which the members are for the most part weavers.
HALDI	- Turmeric.	KABIRAJ	- See Kaviraj.
HALWAI	- A maker and seller of sweetmeats.	KACHCIA	- The opposite of pukka (q.v.); rough, temporary, uncooked, unbaked: thus, "a kachcha bandobast" means "a temporary arrangement," "kachcha bricks" are "sun-dried bricks," and "kachcha houses" are "houses built of earth and sun-dried bricks."
HAMAL	- A porter.	KACHCHI	- A native of the Cutch State.
HAVILDAR	- A sergeant in the Army or Police, a subordinate officer in a position of trust.	KACHCHIA	- The name of a caste of which the members generally are glass workers.
HEADMAN	- A person of influence in his village caste or community who represents his fellows. See Lambardar, Patel.	KAHAR	- The name of a caste of Hindus who act as water carriers, dooly bearers, &c.
HOLI	- An important Hindu festival, held at the approach of the vernal equinox.	KAHTRAI	- The name of a caste. See Khatri.
HOM	- Sacrifice or oblation.	KAKA	- The name of a caste.
HOOKAH	- An Indian tobacco pipe, in which the smoke is passed through water.	KALAL	- The name of a caste of which the members distil and sell liquor.
HUKUM (HUKM)	- A command or order.	KALI	- The Hindu Goddess of Death.
ID	- A Muhammadan religious festival.	KAMAGAR	- The name of a caste.
IDGAH	- A platform, sometimes screened by a wall, used for the assembly of Muhammadans for devotion at the Id festival, and occasionally at other times.	KAMIN	- A menial servant, a person who performs customary services for a village community.
ILAKA	- A tract of country, an area of jurisdiction; in Bombay signifies one of the three Presidencies.	KANDOI	- The name of a caste.
JADEJA	- The name of a clan of Rajputs in the Cutch State, the members of the clan being of the same caste as the Rao (q.v.) or ruler of the State.	KANEDA	- A small swelling or bubo.
JAQIR	- A grant of land or revenue made by Government, an estate.	KANKAR	- A coarse limestone, found chiefly in nodules in the soil of many parts of India, and used for road making, &c.
JAIN	- The name of a sect which is an offshoot of Hinduism, of which the followers lay particular stress upon the sanctity of animal life of all kinds.	KANSARA	- The name of a caste of which the members generally are brass workers.
JAMAAT	- An assembly, a community.	KANUNGO	- A subordinate supervising officer of the revenue establishment employed for the maintenance of village agricultural records.
JAMADAR	- A superior officer in the Army or Police.	KABANJKIR	- The name of a caste of saddlers.
JANJAM	- The priestly division of the caste of the Lingayats (q.v.).	KABBI	- The stalks of jawar (q.v.) or bajra (q.v.) used as thatching material as well as for fodder.
JAT (fem. JATNI, JATTIWE).	The name of the most important caste of agriculturists in the Panjab and Northern India.	KARI (pl. KARIAN)	- A rafter.
JAUHARI	- A jeweller.	KARKUN	- A clerk.
JAWAR	- The Indian millet (<i>sorghum vulgare</i>).	KARNAM	- A village accountant.
JEMADAR	- See Jamadar.	KASAR	- See Kansara.
JHALA	- The name of a clan of Rajputs in the Cutch State.	KATNI	- Lime exported from Katni.
JHIL	- A swamp or shallow piece of water.	KAHIRAJ	- A Bengali native medical practitioner who follows the Hindu system of medicine.
		KAYASTH	- The name of a caste of Hindus who are usually clerks and accountants.
		KHALASI	- A native sailor.
		KHALIPA	- The name of a caste.
		KHALPA	- The name of a caste.
		KHAN	- In Bombay, an inn.
		KHARWA	- The name of a caste of fishermen and sailors.
		KHATTI	- The name of a caste.

- KHATIK** - - The name of a low caste of which the members support themselves principally by keeping pigs and poultry.
- KHATRI** - - The name of a caste of which the members are money-lenders, bankers, and traders; they also own land, though they do not, except very rarely, cultivate it themselves.
- KHETRI** - - See Khatri.
- KHOJA** - - An influential and well-to-do section of Muhammadans, who are merchants and traders; the majority follow the spiritual leadership of H.H. the Aga Khan of Bombay. In Karachi there are two sects, of which one, the Panjabhai sect, recognises the authority of the Aga Khan, and the other, the Pirai sect, does not recognise his authority.
- KHUD (KHAD)** - - A hillside, a steep place, a declivity.
- KHUDABADI** - - The name of a caste.
- KOLI** - - The name of a low caste of which the members are generally fishermen or cultivators.
- KOMATI** - - The name of one of the principal cultivating castes in Madras.
- KONI** - - A kind of grain, a variety of panicum.
- KONKANI** - - A native of the Konkan, the districts south of Bombay, between the Ghats (*q.v.*) and the sea.
- KOONBI** - - See Kunbi.
- KOS** - - A measure of distance, generally about two miles.
- KOTWAL** - - A superior officer of police, an officer in charge of a police station; in the Central Provinces, a village official.
- KULKARNI** - - A village accountant.
- KUMBH** - - A great religious festival held every twelfth year at Hardwar in the North-Western Provinces.
- KUMBHAR** - - See Kumhar.
- KUMHAR (fem. KUMHARIN)** - - A potter; the name of a caste of which the members are generally potters.
- KUNALI** - - A drain, a pipe.
- KUNBI** - - The name of a cultivating caste widely distributed over Central India and other parts of India.
- KURESHI** - - A member of a class of Muhammadans who claim connexion with the tribe of Kuresh, of which the father of the Prophet Muhammad was chief.
- KUTCHA** - - See Kuchoha.
- LAC** - - See Lakh.
- LAKH** - - One hundred thousand.
- LAKHERI** - - The name of a caste of which the members work in lac, and make and sell bangles.
- LALA** - - An honorific title among Hindus; the name of a caste.
- LALARI** - - See Lilari.
- LAMBARDAR** - - The headman of a village, who is responsible for the collection of the Government revenue, and for assistance in the maintenance of order and the execution of Government orders.
- LASCAR** - - Originally, a camp follower; an employe, *e.g.*, in the Arsenal Establishment or in the Fire Brigade; a sailor.
- LATHI** - - A stick or club.
- LEEPO** - - To plaster with earth and cow-dung, the floors of most native houses being every week renewed in this way.
- LEPO, LEPOED, LEFOING.** - - See Leepo.
- LILARI** - - The name of a caste of which the members are cloth dyers.
- LINGAET, LINGAIT, LINGAYAT.** - - The name of a sect of Shivaite Hindus which wears the "linga" as a badge.
- LODHA** - - The name of a cultivating caste in Northern and Central India.
- LOHANA** - - The name of a caste of Hindus of Sind, who are traders, agriculturists, and Government servants.
- LOHAR** - - A blacksmith; the name of a caste of which the members are blacksmiths.
- LONARI** - - The name of a caste of charcoal burners and sellers.
- LUVANA** - - See Lohana.
- MACHCHI (MACHI)** - - The name of a caste of which the members are generally fishermen and boatmen.
- MADHUA** - - See Mandua.
- MADRASSEE** - - A native of the Madras Presidency.
- MAGH SANKRANT** - - The beginning of the Hindu month of Magh (January—February).
- MAGH MELA** - - An important Hindu festival held in certain years near Allahabad in the month of Magh (January—February).
- MAHAJAN** - - A Hindu merchant or banker.
- MAHAL** - - A subdivision of a jurisdiction, area, or town; a ward or quarter of a town.
- MAHALKARI** - - An officer, assistant to the Mamlatdar (*q.v.*), in charge of a mahal or subdivision of a taluka (*q.v.*).
- MAHAMARI** - - Literally "the great disease," a name applied to the plague endemic in Kumaun and Garhwal.
- MAHANT (MAHUNT)** - - The head of a body of Hindu ascetics or of a Hindu religious establishment or mat (*q.v.*).
- MAHAR** - - The name of a low caste of villagers in the Deccan, who work as menial servants, scavengers, &c.
- MAHARWAD, MAHARWARA.** - - The quarter of a town or village occupied by Mahars.
- MAHRATTA, MAHRATTI.** - - A race or people divided roughly into two important classes, the Brahmans and the low castes, formerly the rulers of a large part of India, and now inhabiting the Konkan, Khandesh, the Berars, and the Deccan.
- MAIDAN** - - A plain, a piece of open ground.
- MAKRANI** - - A native of Makran, in Baluchistan, a class of Muhammadans.
- MALA** - - A garden.
- MALHI** - - The name of a caste.
- MALI** - - A gardener; the name of a caste of which the members are chiefly gardeners and agriculturists.

MAMLATDAR	- A native officer with revenue and magisterial powers in charge, as assistant to the Collector, of a taluka or subdivision of a Collectorate.	NAGAR BRAHMAN	- The name of a section of the Brahman caste in the Bombay Presidency.
MANDUA, MANDWA	- A kind of grain (<i>Eleusine coracana</i>).	NAHNI	- A washing place, a lavatory.
MANDWAN	- A light bamboo hut or shed with grass roof.	NAI	- A barber.
MANG	- The name of a low caste of which the members are often weavers, scavengers, and menial servants.	NAIB-TAHSILDAR	- Native officers who act as assistants or deputies to Tahsildars (<i>q.v.</i>).
MANGELA	- The name of a caste.	NAIK	- A subordinate officer, a corporal in the Army or Police.
MANJIHAND	- The name of a caste.	NAIKINI	- A dancing girl.
MARWARI	- A native of Marwar in Central India; a name often used to signify a banker, money-lender, or grain-dealer.	NAKA	- A guard, post, or picquet, at the junction of cross roads, fords, or other places where the movements of travellers can be checked.
MASAN	- The name of a caste.	NAKADAR	- A guard at a naka (<i>q.v.</i>).
MASJID	- A mosque, a Muhammadan place of worship.	NAND	- A large earthen vessel or pan.
MASSAL, MASSALCHI	- A domestic servant.	NARWEKAR	- The name of a caste.
MAT	- A Hindu shrine, an establishment or monastery for Gosains or other Hindu ascetics.	NASARFURI	- The name of a caste.
MATADAR	- In the Baroda State, hereditary village officers who act as sub-Patels or assistants to the village headmen.	NATRA	- The name of a caste of gypsies who live by begging and peddling things for household use such as iron tongs, spoons, &c.
MEGHWAL, MEGHWAR	- The name of a low caste who work as weavers, coolies, and sweepers.	NAWAB	- An honorific title among Muhammadans; the ruler of a Muhammadan Native State.
MEHROBIR	- The name of a caste.	NELA TUTIYA	- Copper sulphate.
MEHTAR, MEHTER	- A sweeper or scavenger; the name of a caste of which the members are sweepers.	NIZAM	- The ruler of the Native State of Hyderabad, in the Deccan.
MEKRANI	- See Makrani.	NULLAH	- A watercourse or stream.
MELA	- A Hindu religious fair or gathering.	NUMRIO	- The name of a caste.
MEMON	- The name of a caste of Muhammadans who engage extensively in trade.	OOPLES	- Cakes of dried cowdung made for use as fuel.
MEMRIS	- The name of a caste.	OSWAL	- The name of a section of the Banniah caste.
MENGWAR	- See Meghwar.	OUTCASTE	- A member of a caste which does not abstain from acts considered impure—such, for instance, as dealing with night soil or handling dead bodies—and with whom the members of castes which do abstain from the acts considered impure do not associate in eating, drinking, or social intercourse.
MOCHI	- A shoemaker, the name of a caste of which the members are principally shoemakers and workers in leather.	PADAMBALI	- The name of a caste.
MODHI	- The name of a section of the Banniah caste.	PADHAN	- The headman of a village in Kumaun and Garhwal.
MODI	- A shopkeeper, grocer, or grain-seller.	PADIAR	- The name of a caste.
MOGA	- An opening, an outlet for a drain.	PAGEE (PAJI)	- An outcaste (<i>q.v.</i>).
MOHALLA	- See Muhalla.	PAGRI	- A headcloth or turban.
MOHANA	- The name of a caste.	PAHARAWALA	- A watchman, a guard.
MOHARRIR	- See Muharrir.	PALKI	- A litter, a palankin.
MOHURRUM (MUHAMMAM).	- The first month of the Muhammadan year, in which the Sunni sect of the Muhammadans celebrate a religious observance in commemoration of the death of Hussain, the son of Ali, the son-in-law of the Prophet Muhammad.	PALWEGAR	- The name of a caste of silk workers.
MOMIN	- The name of a caste.	PAN	- The leaf of the <i>piper betel</i> , chewed with the areca nut (<i>supari</i>) and other ingredients.
MORI	- An opening, an outlet for a drain.	PANCH	- A headman, an arbitrator, a man of influence in a village or community.
MUCCADUM	- The superintendent of a gang of workmen, a headman of coolies.	PANCHAYAT	- A committee of panches (<i>q.v.</i>), by which local affairs are discussed and settled.
MUFASSIL (MOPASIL)	- The part of a Presidency or Province in India outside the Presidency, or capital, town.	PANCHOLI	- The name of a caste.
MUGHAL	- A descendant of a native of Tartary, a class of Muhammadans.	PANDA	- The name of a section of the Brahman caste who have to do with death ceremonies, &c.
MUHALLA	- A ward or quarter of a town.	PANDAL	- A large tent or temporary shelter.
MUHARRIR	- A clerk or vernacular writer.	PANJABI	- A native of the Province of the Panjab.
MUKHTYARKAR	- In Sind, a revenue officer.		
MULLA	- A Muhammadan priest.		
MULO	- The name of a caste.		

- PARAWALLA - - See Paharawala.
 PARBEU - - The name of a section of the Brahman caste.
 PARCHERRY - - In Madras, the outskirts of a town where the lower castes generally live.
 PARDAH - - A curtain or screen, privacy; the seclusion of women.
 PARDA-NASHIN - - A woman who observes the practice of seclusion.
 PARDESI - - Literally "a foreigner," a word used in Bombay to signify a person who comes from Upper India or from a place outside Bombay.
 PARGANA - - A subdivision of a district or jurisdiction.
 PABIAH - - An outcaste (*q.v.*).
 PARSEE - - A prosperous community of traders and professional men, descendants of the ancient Persians, who have retained the religion of Zoroaster, and have been settled chiefly in Bombay and towns on the Bombay coast for about 1800 years.
 PARWARI - - The name of a caste.
 PATEL - - The headman of a village.
 PATH - - The reading or reciting of the Hindu or Sikh religious books.
 PATHAN - - A native of the districts on the North-West of the Panjab and the country immediately beyond.
 PATTAWALA - - A chaprasi (*q.v.*).
 PATTI - - A division of the proprietary holding or of the proprietary body in a village.
 PATTIDAR - - Literally "a sharer," a village landowner descended from one of the founders of the village; the name of a caste.
 PATWARI - - A village accountant.
 PEON - - A messenger or orderly, a chaprasi (*q.v.*).
 PET, PETA, PETH, PETAH. - A market or bazar, a ward or quarter of a town.
 PHAURA - - A hoe or mattock.
 PHOOS - - Dried grass or stalks of corn.
 PHUTKIA ROG - - A name by which the plague endemic in Kumaun and Garhwal is known there.
 PICE - - A coin of the Government of India currency, equal to three pies, or the 64th part of a rupee (*q.v.*).
 PIE - - A coin of the Government of India currency, the 192nd part of a rupee (*q.v.*).
 PIR - - A venerable personage, a Muhammadan saint.
 POKARNA - - The name of a section of the Brahman caste.
 POLE - - The houses situated on each side of a narrow lane which has an opening at one end only.
 POOS - - A month of the Hindu calendar, December—January.
 PORWAL - - The name of a section of the Banniah caste.
 PUCCA, PUCKA - - See Pukka.
 PUJARI - - A priest in attendance at a Hindu temple or shrine.
 PUGRI - - See Pagri.
 PUKKA - - Mature, firm, substantial, lasting; with reference to houses, a "pukka house" is one made of brick or stone and mortar in contradistinction to one made of mud or thatch, and in reference to floors, a "pukka floor" is a paved floor in contradistinction to a floor of earth, or of earth and cowdung.
 PULA - - Long grass, used for thatching, making huts, &c.
 PUNCHAYAT - - See Panchayat.
 PUNDIT - - A learned man, a common title for Brahmins, the name of a section of the Brahman caste.
 PUNKHA - - A fan.
 PURDAH - - See Pardah.
 QASAI - - A butcher; the name of a caste of which the members are butchers.
 RAHBARI - - The name of a caste of which the members are generally owners of camels used for transport, &c.
 RAJBHARA - - The name of a caste.
 RAJA - - An honorific title; the ruler of a Native State.
 RAJPUT - - The name of the highest lay caste of the Hindus, the members of which claim descent from the ancient Hindu Kings of India.
 RAMDASI - - A Sikh convert from the Chamar caste.
 RAO - - An honorific title among Hindus; the ruler of a Native State.
 RAWAL - - The name of a caste.
 RAWALLA - - The name of a caste.
 RAWAT - - The name of a caste.
 RAZAI - - A quilt or coverlet usually stuffed with raw cotton.
 REGUR (REGAR) - - Black cotton soil.
 RESAI - - See Razai.
 RUPEE - - The standard coin of the silver currency of the Government of India, equal to $\frac{1}{16}$ of a pound sterling.
 RUS KAPOOR - - A mixture of perchloride of mercury and calomel.
 RYOT - - A cultivator or agriculturist.
 SADABART - - A Hindu perpetual endowment for a religious or charitable purpose, such as the daily distribution of food or alms to the poor or to travellers.
 SADHU - - A Hindu mendicant who begs in the name of religion.
 SADR - - The chief town in a district at which the Headquarters of the civil administration are fixed.
 SAGAR - - The name of a caste.
 SAHIB - - A gentleman, generally used to signify an Englishman.
 SANTO - - The name of a caste.
 SANUKAR - - A Hindu banker, money-lender, or trader.
 SAIS - - A groom.
 SALAT - - The name of a caste.
 SALI - - The name of a caste.

SANGAR	-	• The name of a caste of blanket sellers.	SUBA	-	- A division or jurisdiction in a Native State, the officer in charge of a Suba.
SANJAM	-	- The term used in Kumaon and Garhwal for an infectious fever, probably typhus.	SUDR	-	- See Sadr.
SANKRANT	-	- The sun's entering into a new sign.	SUMMA	-	- The name of a caste.
SANSI	-	- The name of a low caste, of which the members lead a wandering life and subsist by begging and thieving.	SUKAR	-	- A goldsmith; the name of a caste of which the members are generally goldsmiths.
SARAVAT	-	- The name of a caste.	SUNNI	-	- The name of the orthodox sect of the Muhammadans which recognises the authority of Abubakr, Umar, Usman, and Ali, the four immediate successors of the Prophet Muhammad, and accepts the authority of certain traditions attached to the Quran.
SARI	-	- A shawl or outer covering worn by women, a chaddar (<i>q.v.</i>).	SURTI	-	- A native of Surat in Bombay, a caste of people from Surat who go out to Bombay and other places for service as grooms, cooks, butlers, &c.
SARKARI	-	- Official, governmental.	SUTAR	-	- The name of a caste.
SAEKARKUN	-	- A superior officer of the Salt or Customs Departments stationed at one of the smaller ports in the Bombay Presidency.	SYCE	-	- See Sais.
SARSWAT, SABSUD	-	- The name of a section of the Brahman caste.	TAHSIL	-	- An administrative subdivision of a district or Collectorate (<i>q.v.</i>).
SATA	-	- The name of a caste.	TAHSILDAR	-	- A native officer with revenue and magisterial powers in charge, as assistant to the Collector, of a Tahsil.
SAUJHANI	-	- The name of a caste.	TAI	-	- The name of a caste of which the members are generally weavers.
SAWAR	-	- A mounted man; a mounted policeman; a cavalry soldier.	TAIWAD	-	- The quarter of a town occupied by Tais.
SAYAD	-	- A class of Muhammadans who claim descent from the Prophet Muhammad through his son-in-law and successor Ali and his daughter Fatma.	TAKIA	-	- A Muhammadan shrine, the abode of a Muhammadan fakir.
SEEL	-	- The name of the standard weight in India, about two pounds avoirdupois.	TANAI	-	- The name of a caste.
SEPOY	-	- A soldier, a constable or guard employed in the Police, Customs, or other Department.	TALATI	-	- A village accountant.
SERAI	-	- A rest house for travellers.	TALAVIA	-	- The name of a caste.
SETHI (SETH)	-	- A Hindu merchant or banker.	TALUKA	-	- An administrative subdivision of a District or Collectorate (<i>q.v.</i>).
SHAKTIE	-	- A rafter.	TALUKDAR	-	- In the Hyderabad State, an officer corresponding to the Collector (<i>q.v.</i>) in British India, in charge of a jurisdiction corresponding to a Collectorate.
SHASTRAN	-	- The sacred books or scriptures of the Hindus.	TAMBOLI	-	- The keeper of a shop for the sale of tobacco, pan (<i>q. v.</i>), and betel nut.
SHEIKH	-	- A title taken by Muhammadans who are descended from the Prophet Muhammad, and given to those who become converts to Muhammadanism.	TAFODAN	-	- The name of a caste.
SHENNI	-	- The name of a caste of fish-eating Brahmans.	TARKHAN	-	- A carpenter; the name of a caste of which the members are carpenters.
SHIAH	-	- The name of the sect of Muhammadans which does not acknowledge the authority of the traditions attached to the Quran, or of Abubakr, Umar, and Usman, the immediate successors of the Prophet Muhammad, and regards Ali as the second Khalif.	TATTI HUTS	-	- Huts of reed and grass.
SHIDI	-	- The name of a caste.	TELI	-	- An oil presser and seller; the name of a caste of which the members are generally oilmen.
SHIKARI	-	- A hunter, a sportsman.	THAKUR	-	- A title of respect among Hindus; the name of a caste.
SHIMPI	-	- The name of a tailor caste.	THANA	-	- A police station.
SHRAFF	-	- A money changer, banker, or money-lender.	THANADAR	-	- A superior police officer in charge of a police station.
SHRAWAK	-	- A lay votary of a Buddha or Jaina.	THATHARI	-	- A brassworker; the name of a caste of which the members are generally brassworkers.
SIEKH	-	- The name of the principal class of the people of the Panjab, who are distinguished by their religion as followers of the teachings of the Guru Nanak.	THOKDAR	-	- A leader or man of influence in a village or caste.
SIRKHI	-	- Reed grass, principally used for mat making.	TICCA	-	- A term used to signify vaccination or inoculation.
SIR-SUBA	-	- A high revenue officer in charge of a division of a Native State.	TICCA GHARRI (THEKA GARI).	-	- A wheeled conveyance licensed for hire, a cab.
SONAR	-	- See Sunar.	TICCA WALLAH	-	- The driver of a conveyance for hire, a cabman.
SONI	-	- See Sunar.	TILAT	-	- A Chief of the Rajput clan of the Jadejas in the Cutch State.
SOWAR	-	- See Sawar.			
SUB-PATEL	-	- See Matadar.			

TOLA	-	-	A measure of weight, $\frac{1}{160}$ of a seer (g.v.), equal to about 180 grains troy.	WAGHILA	-	-	The name of a clan of Rajputs in the Cutch State.
TOMTOM	-	-	A native drum.	WAGHRI	-	-	The name of a low caste of which the members earn their living by snaring and selling game, by basket weaving, and by acting as shikaris (g.v.) and labourers.
TOPEWALLAH (TOPIWALLA).	-	-	A hatter; a person who wears a hat, a European.	WAHIVATDAR	-	-	See Wahivatdar.
TOTI	-	-	The name of a caste.	WALKI	-	-	The name of a caste.
TURIA	-	-	The name of a caste of which the members are generally weavers.	WANAN	-	-	The name of a caste.
VAGHRI	-	-	See Waghri.	WANI	-	-	See Banniah.
VAHIVATDAR	-	-	In the Baroda State, an officer in charge of a local jurisdiction.	WARI	-	-	See Wadi.
VAID, VAIDU.		VAIDIA,	See Baid.	YOGI	-	-	A Hindu ascetic or mendicant.
VAKIL	-	-	An agent, and especially a legal agent, a pleader.	ZAILDAR	-	-	An influential landowner appointed for a zail, or subdivision of a Collectorate, to assist in the suppression of crime and in the execution of the orders of Government.
VALUND	-	-	The name of a caste.	ZANANA, ZENANA	-	-	The quarter of a house in which the women live in seclusion.
VANHO	-	-	The name of a caste.	ZAMINDAR	-	-	A landowner, an agriculturist.
VANJA	-	-	The name of a caste.	ZULM	-	-	Tyranny, oppression.
VERAGI	-	-	See Bairagi.				
WADDAR	-	-	The name of a wandering caste of stone cutters and rat catchers.				
WADHO	-	-	The name of a caste.				
WADI	-	-	A garden, a house or group of houses in a garden.				

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 .. Virulence of bacillus of plague.
 .. Widal's test.

BACTERIOLOGICAL LABORATORIES AND IMPORTANCE OF BACTERIOLOGICAL EXAMINATION :

Necessity for :

- Bacteriological examination the only means of certifying plague cases, 22,351.

Provision for :

- Arrangements regarding bacteriological laboratories in India, 7900.
 Bombay City: Bacteriological work carried on in M. Haffkine's and Municipal laboratories, 23, 615, 8488, 17,184, 17,315, 17,378, 17,450, 18,800, 26,185, &c.
 Bombay City: Laboratory in Jamsetjee Hospital, 17,182.
 Bombay Presidency: No experimental Government laboratory in the, 17,183.
 Calcutta: Bacteriological work carried out in, 7470, 8391, 8501, I. 465, III. 655, &c.
 Calcutta: No means of making bacteriological examinations, 8210.
 Hyderabad State: Bacteriological work done in, 5160, &c.
 India: Arrangements for bacteriological laboratories, 7900.
 N.W.P.: Agra district, in, no convenience for making bacteriological examinations, 10,354.
 N.W.P.: Appointment of Government bacteriologist, 8506, 8987.
 Mysore: Government bacteriologist at Bangalore, 3537.
 Punjab: Government makes no provision for bacteriological or microscopical examination in the Punjab, 10,610.

BAGS :

- Hardwar: Plague supposed to be introduced by bags containing dead men's bones sent through the post, 9458.
See Gunny bags.

BANDICOOTS:

Died of plague, 3596.

BANGALORE:*Inoculations with Haffkine's prophylactic at:*

- City: Inoculations on a large scale pushed by the Mysore Government, 3261, 3482.
 City: Statistics of inoculations in, 25,034.
 City: Great numbers of inoculated as well as uninoculated left, 3521, 25,111.
 City: Identification of the dead thrown into the streets difficult, 3522.
 City: Concealment of cases took place even among the inoculated, 3287.
 City: History of inoculation at the Wesleyan Mission, 3539-40.
 City: History of inoculations at the Woollen Mills, 3482.
 City: History of inoculations at French Rocks, results favourable, 3482, 3531.
 Civil and Military Station: Remarks on the accuracy of the inoculation statistics relating to the troops, III, 287.
 Civil and Military Station: Statistics of the number of inoculations performed, 25,034.
 Civil and Military Station: Statistics of mortality among the inoculated very hard to get, 3105.
 Civil and Military Station: Statistics of certified plague cases classified according to inoculation, 25,037.
 Civil and Military Station: Statistics and evidence regarding the outbreak of plague among the troops, and the effects of inoculation among them, I. 114-5, I. 165-75, III, 281-7.

Introduction of plague into:

- City and Civil and Military Station practically one place, and plague measures in both on similar lines, 2534-6.
 City and Civil and Military Station: Precautionary measures adopted, 2606, 3219, 3442.
 City: Gowdenpot quarter first found on 14th August 1898 to be infected, 3230, 3349, 3448-53.
 City: Introduction of plague possibly by infected goods, raw hides, or rats, or on wagons coming by rail from Hubli, 3222-3.
 City: Second separate focus of infection found in the Arlepet quarter, on the 22nd of August 1898, 3223-5.
 City: Uncertainty as to the first case in the Arlepet quarter, and as to the source of infection, 3223, 3474-7.
 Civil and Military Station: Case imported from Hubli by rail on 12th August 1898, 2538, 2545.
 Civil and Military Station: Disease spread into, from the City, whence plague patients came over, 2547.

Statistics of plague at:

- Bangalore and neighbourhood: Number of cases, 3481.
 Bangalore and neighbourhood: Spread of plague in the villages, I. 131.
 City: Mortality in, 3481.
 City: Progress of plague, I. 129.
 City: Statistics relating to the epidemic, 3479.
 City and Civil and Military Station: Statistics relating to the epidemic, III. 274-5.
 Civil and Military Station: Statistics of population and of plague attacks and deaths, I. 107-9.
 Civil and Military Station: Mortality very high, 2611-4.

See Maps and Charts.

BANNIAHS AND TRADERS:*First cases among:*

- Baroda City: Plague first appeared in grain market, 15,459.
 Bombay City: First detected case Banniah's wife, 592.
 Bombay City: First outbreak in grain quarters among Banniahs, Jains, Bhutias, and Brahmans, 911.
 Bulsar: First epidemic in grain sellers' street, which escaped in second epidemic, 16,316.

BANNIAHS AND TRADERS—cont.

- Calcutta: First case detected in 1898, that of a shopkeeper, 6462.
 Karachi: First outbreak began in street occupied by merchants trading with Bombay, 11,096.
 Karachi: Second outbreak began among males of Banniah families who went on business to their shops, 11,197, 11,359.
 Kotri: First case a Banniah, but probably not infected from his shop, 12,596, 12,706-8.
 Nasik: Disease first noticed chiefly among grain sellers, 13,578, 14,693.
 Sirohi: First 26 cases all Banniahs, 9764.

Granaries and shops, liability to contract plague in:

- Bangalore: Cases traced to a shop, 3365-74.
 Bombay City: First cases in granaries, 17,012.
 Bombay City: Grain and flour sellers died in Bombay in 1896-7 in infected localities, but did not form centres for the spread of the disease, I. 378.
 Bombay City: Not only epidemics, but also sporadic outbreaks, spread from granaries, 1000.
 Chipigiri: Cases traced to a shop, 4945-50.
 Infection caught in a granary, but not from the grain, 13,813.
 Karachi City: Plague spread from granaries whence goods distributed by traders, and first appeared among those who went to their shops on business, 11,197, 11,359, 11,413.
 Molagavelli: Cases traced to a shop, 4906.
 Theory that in addition to rats and clothing, something indefinite in grain shops spreads plague, 11,278, 11,430.

Plague introduced by, into:

- Asu, 12,449, 12,451.
 Ilkal, 19512.
 Jalgaon, 24,529.
 Kaira villages, 14,053.
 Kajurg, 5501.
 Molagavelli, 4980.
 Palampur, first outbreak, 13,054.
 Palampur, second outbreak, 13,059.
 Poona, third outbreak, 25,860.
 Reri, 12,446,-7, 12,486.
 Sirohi, 6414, 9702.

Plague most severe among, in:

- Ankleshwar, 14,448.
 Baroda: Banniahs and low caste people considered most liable, 12,483.
 Bombay City, 17,681-4.
 Gadag, in December 1898, 23,608.
 Hyderabad State: Banniahs (said to be low caste people) and Lingayats considered most liable, 5474-5.
 Karachi, 11,118, 11,339, 11,357, 11,538.
 Kotri, 12,578, 12,597, 12,640.

Spread of plague by:

- Banniahs and traders travel more than others, being better able to do so, and come more in contact with people, hence human intercourse most important factor in, 10,244, 13,422, 23,607.
 Grain stores not the cause of plague. None of the coolies attacked who cleared out an infected godown, 19,437.
 Hubli: Plague not specially marked among traders, 1717.
 Nasik: Banniahs and other parties from Bombay grain quarters continually found arriving ill with plague before local outbreak in Nasik, 13,758.
 Nasik: Plague spread in villages by class of people corresponding to grocers, 14,693.
 Pali, outbreak of 1836, spread of plague by traders in, remarkable; similar thing noticed now, 8705-7.
 Rats as well as personal communication an important factor in, 3785-9, 3831-6, 15,459, 15,471, 17,837, 22,645-6.
 Spread by Banniahs through grain and rats, 11,430.

See Evacuation: attitude of the people towards evacuation.

„ Habits of the people affecting liability to plague.

BEDS:

Cases most numerous in people sleeping on the floor, 24,349-51.
 Christians in the village of Vadala sleeping in beds more immune than the Hindus sleeping on the floor, 19,446.
 Europeans relatively immune because they sleep in beds, 19,447.
 Karachi: In one house everyone got plague except one man, who slept on the only bed, 22,655.
 Kumaun: People sleep on the floor, 26,625-6.
 Most people in Poona sleep on the floor, 21,594.
 Parts of the floor on which people sleep kept clean, 5903.
 Sleeping on beds a greater protection than sleeping on floors, 22,555.
 Sleeping on the floor a means of infection, 21,311, 21,498, 21,594, 24,319.

BHANG:

Immunity of persons who indulge in bhang from attacks of plague, III. 43.

BHATIAS:

Bombay: Suffer severely from plague in Mandvi ward, 911.
 High plague mortality among the Bhatias in Bombay, 17,683.

BHILS:

Ankleshwar: Bhils least affected at, 14,445.
 Bhils suffered less on account of their leading an open-air life and their residing on the outskirts of the town, II. 246.

BIRDS:

Immunity:
 Birds not usually affected by plague, 908.
 Birds unaffected by plague, I. 378.
 Pigeons unaffected by large quantities of plague injected under the skin, 25,315.
 Vultures immune against plague, 8644.

Plague Cases:
 Fowls died with buboes in neck and groin in houses where, shortly before, plague had occurred, 19,096.

BLACK COTTON SOIL:

See Evacuation. *The rains and their effect on evacuation.*
 „ Geological conditions.

BLOOD:

Character and life of bacillus in:
 Bacillus of plague dies more slowly when obtained from the urine than from the blood, 26,337.
 Bacilli from blood stain better than bacilli from cultures, 26,125.
 In the blood and tissues of animals the character of the microbe is constant and distinctive, 26,123.

Discovery of bacillus in blood:

—: *Death, after:*
 Always found after death in the blood, 1430-1.
 Found abundant in the veins one hour after death, 26,401.
 Found post-mortem in the blood, I. 370.

—: *Dejecta of patients:*
 No plague microbes found in the bloody dejecta of human patients, 8603.

—: *Life in:*
 Blood of living animals in the early stages of the disease, not found in the, 27,397.
 Found in the blood of bubonic cases 24 hours before death, 10,443-4.
 Found in blood during life, 1430-1, 7189.
 Fifty-one hours before death the longest period in which found in the blood, 26,400.
 Frequently obtained from blood of plague patient, 26,399.
 Isolated in the living patient, about three hours before death, from the blood stream, 7189.
 Not found in blood of plague patients, 1415.
 Only found in blood just before death, I. 374, 4333.
 Prognosis: Disappearance of bacillus from, sign of favourable prognosis, 20,807.

BLOOD—cont.

Prognosis: Presence of bacilli in the blood a bad prognosis, 20,805.

Prognosis: Recovery never noted when the blood was infected with the microbe, 17,402.

—: *Nose, Discharge from:*

Found in the bloody discharge from the nose in patient with sub-mental buboes, 26,259.

—: *Pneumonic Cases:*

Always to be found in the blood of patients who died of the pneumonic form, 17,258.

Post-mortem appearance:

Blood less coagulated than in death from other causes, 1425.

Of circulatory system, I. 368.

See Rats: *Discovery of bacillus in blood of.*

BOILING:*Adopted as a means of disinfection:*

Articles boiled at Hardwar, 9047.
 Bedding and clothing boiled in the Hyderabad State, 5155.
 Clothes and bedding in Hyderabad State boiled twice, 5466.
 Clothes and bedding boiled for a full hour, 1319, 5926, 18,124.
 Clothing disinfected at Ankleshwar by placing it in carbolic acid lotion for half an hour, or simply boiling it in water, 14,255-7.
 Clothing disinfected in Cutch Mandvi by boiling, II. 474.
 Clothing disinfected by boiling on railways, 1315, 1319.
 Grain bags disinfected at Hinganghat by boiling, 6066.

BOMBAY:*Inoculation with Haffkine's prophylactic in:*

Details of the first 8,142 inoculations in the City, 32, 48-9, 52.
 Every facility offered to the people in, 22,296-8.
 Good effects of inoculation in 600 families of Parsees, 18,344-61.
 Inoculation of the Cama Hospital nurses, 23,531.
 Inoculation of nurses at the Jamsetjee Jeejeebhoy Hospital, 20,529-30.
 Observations in the cases of 2,000 Parsees inoculated with good result, 19,261-325.
 Used and encouraged in, 918, 17,878.
 See Byculla Jail.
 „ Umakhadi Common Jail.

Introduction of plague into:

Earliest cases: Case seen on 16th July 1896, 18,295.
 Earliest cases: Cases seen in July 1896, 19,133.
 Earliest cases: Cases occurred in July or August 1896, 1175.
 Earliest cases: Cases seen in the middle of August 1896, 17,760.
 Earliest cases: 13 cases seen on 11th September 1896, 20,412.
 Earliest cases: Reported by Dr. Viegas on 23rd September 1896, 578-614, 1018.
 Earliest cases: Appeared among the Banniahs, Jains, Bhatias, and Brahmans of the Mandvi quarter, 911.
 Earliest cases: In Mandvi quarter and not in neighbourhood of places where Kumaun pilgrims stay, 1021-4.
 Hong Kong: Bombay infected not from Kumaun, but from Hong Kong, whence infection imported in Chinese crackers, 19,016.
 Hong Kong: Case of plague arrived at Bombay in March 1899 on board the *Bormida* from Hong Kong, 25,506.
 Hong Kong: Importation from, 18,295.
 Hong Kong: Imported from in Chinese crackers, and by dead rats, 17,772.
 Hong Kong: No plague in ships arriving from, in 1897-98, 776.
 Hong Kong: Probable source of infection, not Kumaun, whence a person coming to Bombay without breaking his journey would take about 32 days on the road, 26,691-704.
 Hong Kong: Rats from Hong Kong imported the disease which did not come to Bombay from Kumaun, 22,247-53.

BOMBAY—cont.

- Hong Kong: Rats, plague imported by sick rats from, 19,437.
- Indigenous: Impression that plague indigenous in Bombay and neighbourhood, 901.
- Indigenous: Plague indigenous in Bombay and not imported in 1896, 19,133.
- Indigenous: Plague was not imported in 1896, but is indigenous in Bombay; cases occurred in 1893, 18,276.
- Kumaun: Case resembling plague occurred among people from Kumaun who went to Bardwan in Bengal before outbreak in Bombay, 1158.
- Kumaun: Importation from, improbable, 6186.
- Kumaun: Plague imported into Bombay from, 1545.
- Kumaun: Rats, imported in articles from Kumaun infected by disease, 977, 988.
- Kumaun: Three suspicious deaths occurred among pilgrims in August 1896, 1027.
- Manner of introduction: Report of Bombay Plague Research Committee regarding, I. 377.
- Rats: Before plague broke out the rat population had enormously increased, and dogs that killed rats in Mandvi became ill, 997.
- Sea: Importation by sea and not from Kumaun, 17,358.
- Sea: Rats; no dead rats in ships coming to Bombay in 1896, 1191.

Statistics of mortality and general statement of measures in:

- Measures adopted on first appearance of plague, 908-16.
- Measures adopted on resumption of control of plague operations by municipal authorities in June 1898, I. 56-58 (1342-68); III. 305-10 (25,507-661).
- Mortality: Average before outbreak of plague, fluctuating, 882-7.
- Mortality in Bombay just before plague outbreak, and special meteorological conditions which prevailed, 892.
- Mortality: Normal about 28 per mille, 25,722.
- Mortality: Normal monthly from September 1896 to March 1899, 25,720.
- Mortality: Recorded plague, from September 1896 to March 1899, 25,721.
- Mortality: Total monthly, from September 1896 to March 1899, 25,719.
- Statement of deaths and births from commencement of plague to May 1897, I. 394.
- Statement showing the number of deaths from bubonic plague from September 1st, 1896, to March 16th, 1899, III. 310.
- Statement showing the number of plague deaths from 1896-9, III. 313.
- Table of total mortality per month, from September 23rd, 1896, to the end of February 1899, III. 312.

See Maps and Charts.

BOOTS:

- Boots and clean hands prevented disinfecting staff from taking infection, 16,007.
- Chinese in Calcutta wear boots; only one case among them, 6863.
- Europeans relatively immune because they wear boots, 19,447.
- Infection through skin of feet probable as disease disappears from establishments employed in an infected place on employes getting boots, 7181.
- See Habits of the people affecting liability to plague.

BORAHs:

- Borahs at Surat kept themselves from intercourse with people of infected quarters, and escaped altogether, 16,071-2.
- Borahs and upper classes least liable to infection, 22,673.
- Borah community in Mandvi promptly segregated; low rate of mortality; treated with Yersin's serum, I. 353.
- Borahs went into segregation camps in Mandvi and suffered little, although under no control, 473; 566.

BUBOES:

- See Glands.
- „ Glandular fever.

BUBONIC PLAGUE:

Character of:

- Account of plague by the President of the Bombay Plague Research Committee, I. 377-97.
- Anand Hospital: Among the 78 cases 54 were bubonic, 14 pneumonic, 4 bubonic and pneumonic, 5 atypical, and 8 septicæmic, 14,116.
- Bubonic cases represent about 75 per cent. of the whole number of cases, 9359.
- Bubonic type shades into septicæmic, I. 471.
- Calcutta, classification of cases at Medical College Hospital, 7073.
- Character of plague cases at Medical College Hospital, 6861.
- Difference between septicæmic and bubonic plague the lesser resistance of the glands, I. 368.

Bubonic cases and pneumonia:

- Pneumonia developed in bubonic cases, 14,121.

Bubonic as well as Pneumonic Plague contracted from Pneumonic cases:

- Bubonic plague from pneumonic cases, 2 instances, 16,048.
- Bubonic plague communicated by inoculation from pneumonic case, 7218.
- Bubonic case contracted from bite of pneumonic patient, 4567.
- Bubonic case contracted by medical attendance on pneumonic case, 9566.
- In Gangaur from one case of probable pneumonic plague 37 deaths followed, both bubonic and pneumonic, 13 of the deaths being among the relatives of the first case, 15,182-5.
- In one instance a pneumonic case gave rise to both bubonic and pneumonic cases among 8 persons, who all died, 17,990-1.
- No instances of bubonic cases from infection by cases of pneumonic plague or *vice versa*. 14,123, 14,709, 17,785, 17,890, 18,206-7, 18,440, 19,075-6.
- No case of bubonic plague traced to contact with a pneumonic case, 12,729.
- One case of pneumonic plague at Manora gave rise to one bubonic and 3 pneumonic cases, 12,997-8.
- Pneumonic plague communicates the bubonic form as well as the pneumonic, 1517.
- Pneumonic case gave rise to a bubonic case, 13,177.
- Pneumonic plague, in one instance, gave rise to 2 bubonic cases, 18,214-6.
- Six instances in which pneumonic cases gave rise to bubonic cases, 15,280.

Bubonic Cases give origin to Pneumonic Plague:

- Bubonic case in one instance gave rise to combined bubonic and pneumonic case, 17,968-9.
- Instance of infection of members of a family in Hardwar, one bubonic case followed by three bubonic and two pneumonic cases, 9558-60.
- Mixed bubonic and pneumonic case gave rise to two pneumonic cases, 13,179-82.
- No instances of pneumonic plague from bubonic case or *vice versa*, 14,123, 14,709, 17,785-7, 17,890, 18,206-7, 18,440, 19,075-6.
- No instance in which bubonic plague gave rise to pneumonic case, 19,208.
- Pneumonic plague got by contact with bubonic cases, 12,723.
- Pneumonic plague contracted from bubonic case, one instance, 16,048.
- Six instances in which bubonic cases gave rise to pneumonic cases, 15,280.

Bubonic Cases give rise to Septicæmic Plague:

- Bubonic plague case gave rise to a case of septicæmic plague with secondary pneumonia, 13,003-13.
- Septicæmic plague contracted from bubonic; 10 instances, 16,048.
- Septicæmic shades into bubonic form, I. 471.

Bubonic Cases infected from Bubonic Cases:

- Bubonic plague, infection communicated from cases of bubonic plague in Reri, 12,482-6.

BUBONIC PLAGUE—cont.

- Bubonic plague contracted from a bubonic case, one instance, 16,048.
 Bubonic cases give rise to bubonic cases, the virus being carried by the hands to the mouth and nose, 17,985-7.
 Bubonic plague not so infectious as pneumonic plague, but in one house 8 or 10 cases all bubonic infected from bubonic cases, 19,209-16, 19,221-2.
 In Rahon 16 cases and 10 deaths, all bubonic, without occurrence of any pneumonic cases, 10,596-9.
 Two cases of bubonic plague probably contracted from bubonic cases in Dharwar Hospital, 1900-1.

Infectiousness of Bubonic Plague:

- Bubonic plague infectious, but no instance noted of direct infection from bubonic case, 501-8.
 Bubonic plague can spread disease only by the evacuations, 4372-3.
 Bubonic plague not very infectious, 19,964.
 Case of bubonic plague may become very infectious if pneumonia sets in, 6918.
 In good sanitary surroundings, e.g., hospitals, bubonic plague not very infectious, 1439, 1514-6.
 Mere contact with bubonic patient will not give plague, 7512, 17,789-90.
 No cases, except pneumonic, observed to be infectious, 9586.
 Simple glandular form practically not dangerous, 925, 1165.
 See Case mortality.
 „ Glandular fever.
 „ Infectiousness of plague.
 „ Post-mortem appearances in plague.

BUGS:

- Bugs and fleas possible agents for carrying infection, 9500-4.
 Bugs, influence in spreading disease considered unimportant, I. 378.
 No evidence that bugs in hospitals are infectious, 20,640, 20,999.

BULLAE:

- Appearance of bullae after acute stage sign of favourable prognosis, 16,816
 In the Daman epidemic of 1898 a form of plague noticed, accompanied by bullous inflammations, 16,794.

BURNING:**Bodies:**

- Hyderabad: Disinfection by burning of bodies, 5155.

Clothes:

- Bombay: Clothes of patients leaving plague hospital burnt, 561.
 Calcutta: Clothes burnt and compensation paid, 6533.
 Hyderabad State: Disinfection by burning of useless clothes and bedding, 5155.
 Karachi: Clothes and bedding of people dying of plague in camps invariably burnt, 11,895.
 Karachi: Everything in contact with plague patients destroyed in the first epidemic at Karachi, 11,650.
 North-West Provinces: Clothing burnt, 9029.
 North-West Provinces: The burning of the funeral clothes stopped the spread of plague among the Acharaj, 9460.

Clothes: attitude of natives towards burning of:

- Karachi: Burning of clothes objected to by the people, 11,379.
 Natives resent their clothes being burnt, 11,379.
 Natives believe in infection through clothing, and do not object to infected clothes being burnt 14,724, 14,761.
 Natives hide their infected clothes to prevent their being burnt, 24,393.

Floors:

- Ahmedabad: Burning of floors resorted to as disinfecting method, 13,923.
 Bellary: Floor burning used as disinfecting method, 4419.

BURNING—cont.

- Burning the surface of mud floors best means of disinfection, 8558, 8609.
 Guntakal: Upper two inches of floor dug up and burnt to disinfect, 5117.
 Kalindri: Floor burning resorted to as disinfectant, 9894.
 Kotri: Disinfection by burning of floors, 12,536, 12,562.
 Latrines: Burning grass on floor useful for disinfecting, II. 13.

Houses:

- Burning out of houses the surest method of disinfection, 15,178, 20,160-2.
 Daman: Burning of infected houses first step taken in 1897 epidemic, 16,388.
 Hinganghat: Several houses burned, 5991, 6039.
 Hubli: An infected street burnt down, 1645, 1954.
 Hyderabad State: Disinfection by burning of houses of imported cases, 5155.
 Indian houses, burning the only cure for disinfecting, 15,178.
 Jawalapur: Burning of huts, 8934.
 Khandraoni: House burning as disinfecting method in, 9650-3.
 Khandraoni: All infected houses and property burnt, 9650.
 Kumaun: In cases of Mahamari villagers themselves desire houses to be burnt down, II. 362 (262).
 N.W.P.: Hut in which plague occurred in camps burnt down, 9168.
 N.W.P.: In villages where solitary cases occurred the infected house was evacuated and burnt, 9134.
 Panjab: Burning of infected houses limited the spread of the disease in two villages, 10,240.

Houses, inside:

- Burning grass on floors inside houses efficient but dangerous method of disinfecting, II. 12, 13.
 Dharwar: Insides of infected houses burned, 2331.
 Hubli: Houses unroofed and inside burned, 20,162, 20,191.
 Kerosene oil method liable to burn houses down, and not complete, I. 442.
 Many accidents through kerosene burning in situ, I. 456.

Rubbish:

- Burning of infected articles of small value only an insufficient method, 16,155.
 Karachi: Rubbish burnt, 81,647.
 Malegaon: Evacuated houses disinfected and rubbish burnt, 13,781.
 Palanpur: Burning useless articles resorted to, 13,091-4.
 Rohri: Everything found in infected houses burnt as a measure of disinfection, 12,029.
 Sholapur: Rags and clothes of no value burnt, 23,923.
 See Kiln—burning.

BYCULLA JAIL, BOMBAY.**Inoculation with Mr. Haffkine's prophylactic in:**

- Correspondence with Mr. Haffkine and the Government of India regarding the correctness of the inoculation returns relating to the Byculla Jail, Bombay. III. 658-61.
 Effects of inoculation in the Jail, 20,364-79.
 Inoculations performed in the Byculla Jail, Jan. 1897, 34-40.
 Particulars of inoculation in the Byculla Jail, 17,052-57.
 Prisoners not selected for inoculation: inoculated and uninoculated comparable, 20,347-58, 20,360-3.
 Report by Lieut.-Colonel Waters, I.M.S. on the inoculations in the Byculla Jail: 17,113.
 Statement of ages of the prisoners attacked by plague, 20,380.
 Statement of particulars regarding plague and inoculation in the Byculla Jail, Bombay, III. 445-56.

Serum Treatment in:

- Treatment of prisoners in the Jail with Haffkine's curative serum, 133, 17,048-51.

CALCIUM CHLORIDE.

Désiccation with calcium chloride kills bacillus of plague in 18 hours, 26,346.

CALCUTTA:

Inoculation with Haffkine's prophylactic in:
Course of, I. 475-7.

Proclaimed as voluntary, I. 468.

Progress of inoculation, I. 476.

Tables of inoculation statistics, I. 476.

Two thousand four hundred and ninety operations, 6572.

Introduction of the infection in 1898.

Cases had occurred before the first detected case though they had escaped recognition, 6471, 6944, 7123, 7482.

First detected case that of a man found dead on 17th April 1898: source of infection not traced, 6430, 6462, 6471, 6608.

Merchandise: On account of precautions taken on railways and length of sea voyage from Bombay, importation of infection in infected articles suggested, 6882.

No evidence of importation by land by a plague patient or person in the incubation stage of the disease, I. 464.

Rail: Evasion of railway inspection and disinfection by persons who came from plague-infected places known to have occurred before the 1898 outbreak in Calcutta, 7481, 7488-500.

Rail: Importation by rail by a person who was sick of plague or had been in contact with the disease improbable, 6882, 7178.

Rail: Information obtained, though without precise details, of a man having come from Bombay and sickened of plague in Calcutta just before the 1898 outbreak, 6701.

Rats: Suggestion that the disease was introduced by rats coming over sea, 7118, 7129, I. 464.

Sea: No evidence that any case of plague came by sea to Calcutta, 7178.

Sea: Suggested infection from the case of a man who came from Bombay by sea in 1897 and fell ill with plague, 7027, 7054.

Plague in 1898:

City declared free of plague, 10th October 1898, 6756.

Clinical history and post-mortem appearances of the first plague cases at Calcutta, I. 465.

Five cases of plague at Manicktolla Hospital; opinion that none were such, 8136-8.

Haffkine's bacteriological diagnoses of bacillus in Calcutta plague cases said to be doubtful, 8203-9.

Historical retrospect and details of the epidemic during middle of year 1898, I. 463-78, 6757.

Number of cases said to be wrongly diagnosed as plague, 8128-233, 8331-42, 8352-6.

Opinion that absence of nervous symptoms in cases diagnosed as plague in Calcutta make their being plague improbable, 8148, 8151.

Opinion that Calcutta cases in 1898 certainly plague, 7315.

Opinion that case of plague at Chandni Hospital really gonorrhoea and malaria, 8161.

Opinion that malarial patient wrongly diagnosed as plague. No bubonic or pneumonic symptoms, 8181.

Opinion that no plague in Calcutta in 1898-9, 8176-80, 8232-3.

Plague bacillus obtained post mortem from nearly all of (15 or 20) the cases tested in Calcutta, 8301-3.

Post-mortem appearance of first Calcutta case, 1898, 6462.

Reported plague cases in Calcutta after the town was declared free, 6762-97, 7096.

Sanitary Condition of Calcutta:

Cholera appeared in Calcutta in 1898 and much less than usual, 6878.

Conservancy rendered difficult at Calcutta by coolie strikes, I. 471.

Fearful sanitary condition of ports, I. 464.

Spread of Plague in Calcutta:

Spread of the plague in epidemic form; something in the environment of Calcutta inimical to the, 7027.

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Statistics relating to Calcutta:

Attacks in various wards of Calcutta, I. 473.

Cases, month by month, 6757.

General mortality rates, 6758.

Mortality in 1898 apparently low, large number left the town, 6543.

Mortality below normal during plague, I. 471.

Mortality in years previous to plague, I. 463.

Plague cases from October 1st to December 29th, 1898, I. 240.

Statistics of population and deaths from plague and general causes, 6518.

Tables, to show that the present mortality in towns near, and districts round, Calcutta is lower than in the five previous years, 6758.

Suspected Cases of Plague in 1896 in Calcutta:

Bacillus found in cases during supposed plague shown by Dr. Cunningham not to be the plague bacillus, 6693-8.

Bacillus not found in blood of patients, I. 487.

Bacteria from cases during supposed plague obtained like bacillus pestis, 25,320-32.

Bacteria obtained from cases during supposed plague inoculated into animals which recovered, 26,833-42.

Bacteriological examination of cases during supposed plague in 1896 and opinion that plague bacillus not found in those cases note by Dr. Cunningham, III. 655.

Bepin: Case of double orchitis and glandular enlargement resulting from injury to the foot, I. 491-2, 6723-36.

Bepin: Case of, plague bacillus recovered in pure culture from the case of Bepin, fatal to rats, and said by Mr. Haffkine to microscopically resemble the plague bacillus, 26,908-14, 26,986, 27,009.

Cotta's case; notes on, probably venereal, I. 488-90, 26,817, 26,948-61, 26,997-27,003.

Giga, case of, I. 493-4.

Giga, case of, bacillus like plague recovered from rats connected with Giga's case, 7101-77, 26,895-7, 27,009.

Girl in Bowbazar; case of, 26,919-31.

Glandular fever with enlargements, three case of, 26,919-31.

Golab; case of, 26,892-4.

Heman Shah; case of, I. 491, 26,880-86.

Hodges, Grace; case of, I. 490, 26,875-9.

Marcellies; case of, I. 494, 6845-58, 26,915.

Medical Board, Report on suspected plague in 1896, I. 487-96.

Medical Board Report, disagreement with 1029-31.

Medical Board, Constitution of, 26,818.

Merchandise from Bombay suggested as source of infection in Giga's case, 7101-16.

Opinion that cases which occurred in 1896 not plague, 7028-9.

Presidency Hospital, Calcutta, two suspicious cases in October 1896, I. 491.

Rats: Heavy mortality of rats in Armenian Street, I. 493.

Rats: Notes by Dr. Cunningham regarding mortality of rats, and examination of rats which died during supposed plague in 1896, no evidence of plague among them being obtained, III. 655-6.

Rats: Mortality among rats which occurred during plague in connexion with Giga's case, rats suffering from glandular sickness, and bacillus like plague being recovered from them, 26,898-907.

S.M.N.; case of, 26,887-90.

Shropshire Regiment, cases in, different from ordinary glandular fever, 26,964-85.

Shropshire Regiment; cases in, I. 494-5.

Shropshire Regiment, cases in, bacillus morphologically like bacillus pestis isolated but inoculated into animals without effect, 26,843-67.

Shropshire Regiment, cases in, not plague, 26,843.

Tin Cauri Pal; case of, I. 491, 26,868-74.

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CAMPS:

Arrangements in Camps:

• Aukleshwar camp, poor maintained in, by the municipal council, 214, 225.

CAMPS—cont.

- Bandra camps, each family had a separate hut, and castes were kept together, 8236-43.
 Baroda, camp organisation at, 14,619-20.
 Baroda, two kinds of camp at; authorised and unauthorised camps, 14,615-6.
 Camps under the trees a great comfort, 10,239.
 Castes kept together in camp as far as possible 8214.
 Combination of segregation, health and detention camps a more economic and better working measure than a series of separate camps, 18,393.
 Cutch, village camps in, 13,445.
 Hardwar union, camp arrangements in, 9327-43.
 Malegaon, arrangements for camp at, 18,074.
 No plague-stricken person admitted in health camp, 12,658.
 N.W.P.: arrangements and rules for camps, 9334-41.
 Sholapur camps, streets of shops in, 20,259.
 Thatched huts erected by Government as a plague hospital in the private camp at Jawalapur, 9341.
 Two chappars separated from the camp at Hardwar for observation of suspicious cases, 9336.
 Umreth, arrangements for camps in, 14,028-36.

Attitude of the People towards Camps:

- Baroda, people in the health camps at, reluctant to go back to town, 14,687, 15,168.
 Better surroundings and the absolute safety from infection are highly appreciated by the people, 26,555.
 Bombay: Fifteen hundred people pay rent in one camp at Bombay, 8231.
 Bombay people, health camps popular with; some prefer to stop and pay rent, 1345, 8273.
 Bombay: People object to leave in Bombay, 8275.
 Broach: People behaved most admirably in camp, 15,503.
 Camp life liked in summer, 15,509.
 Jawalapur: Permission to attend the Id and Holi festivals gave no trouble at all, 9343.

Camps provided for the People:

- Bangalore: Two hospital camps and health camps at, to accommodate 400 persons, 2550.
 Bangalore City: details of accommodation provided for, 1, 131.
 Bombay: Accommodation of camps in, 1081.
 Bombay: Camps provided for evicted people from each ward, 19.
 Government huts built with regard to sanitation should be ready, 22,289.
 Government huts should be ready to receive the whole population, 22,239.
 Hubli: For 2,600 erected at, 1611, 1552.
 Karachi: Accommodation for 1,500 persons in segregation camp at, 11,633.
 Karachi: Conditions at, favourable for large segregation camps, 11,831.
 Poona: Camps erected for infected regiments on Gibbet Hill, 21,251.
 Sholapur: Large camps laid out at, at Government expense, 20,231.
 Surat: camps provided by Government, 24,419.

Disinfection in Camps:

- Ankleshwar: Clothes and effects disinfected on going to camp, 14,224.
 Bandra: Clothes not disinfected, 18,600-1.
 Bangalore: On removal of persons at segregation camps, disinfection by pouring a solution over them, and afterwards bathing them in water, 3300.
 Baroda: Evacuation, accompanied by disinfection of persons and belongings, 14,625.
 Calcutta: Property of persons taken to segregation, and isolation camps disinfected on arrival, 6536.
 Chipagiri: All persons in segregation camp disinfected before returning to their houses, 4415.
 Clothes, disinfection of, should always precede admission to, 24,196.
 Dharwar: Contacts disinfected on arrival in camps, 1911.

CAMPS—cont.

- Effects of people disinfected before return from camp, 11,314.
 Evacuation must be combined with the disinfection of the infected area and persons, 10,363.
 Evacuation must be combined with disinfection of clothes, 24,193, 24,196.
 Evicted people on arrival, disinfection of, 12,657.
 Hardwar: Coolies engaged in disinfecting work kept in separate camp with wives and children, 9342.
 Hyderabad State: Clothing and bedding boiled on entering and on leaving camp, 5,466.
 Karachi: Disinfection of persons effected before removal to camp with good results, 11,143-8, 18,451.
 Karachi: Exposure to sun the only method of disinfection used in the Nassarpuri camp, 11,490.
 Khandraoni: New clothes given to people in camp before they returned to their houses, 9661.
 N.W.P.: People, except at Hardwar, disinfected on going to camp, 9263-5, 9294-7.
 Panjab: Before leaving evacuation camp every person given a phenyle bath, 10,049, 10,235.
 Panjab: Clothes not disinfected, 18,600-1.
 Panjab: Clothes of inmates exposed to sun for ten days, 10,048.
 Panjab: Effects of people disinfected after they went to camp, 10,471.
 Panjab: People disinfected before removal to camp; good effects observed at Shikohpur and other places, 9993-5, 10,145-6.
 Poona: Comparison between cases in which clothes disinfected and a case in which clothes not disinfected to establish the value of disinfection, 21,251-7.
 Poona: Contacts sent to segregation camps disinfected, 19,936, 21,272-4.
 Proper disinfection and organisation of segregation and other camps preclude the possibility of a camp epidemic, 18,391.
 Sholapur camp: Disinfection of all new arrivals, &c., 20,235.

Occupation of People in Camps:

- All ordinary handicrafts carried on in the camps at Sholapur, 23,922.
 Ankleshwar: People allowed to go into town on business without bad results, 14,225-8, 14,408-9.
 Baroda: People allowed to go to their shops for business, 14,632.
 Bombay: People allowed to go about their work from segregation camp if back at night, 1354.
 Difficult problem to find occupation for the people in camp, 9335.
 Hubli: People allowed to go about their daily business, 1652.
 Hyderabad: People in evacuation camp allowed to go to town for their business under supervision, 18,119.
 Hyderabad villages: Difficulties of evacuation with weavers, 5456.
 Jawalapur: All beds and tables used in the plague hospitals made locally in the camps, 9335.
 Karachi: People in segregation camp allowed to go to their occupations in town, 11,320-5, 11,433, 11,678, 12,752-5.
 Kotri: People allowed to go to the town on business, but not to their houses, 3760-9.
 Malegaon: Weavers with their looms taken into the health camp at, 18,075, 13,777.
 Nasik: No bad results from allowing people to attend to their occupations in town during the day, 13,609.
 People may safely visit the town by day on business if they sleep in camp, 24,197-8.
 Restraining the people entirely from going into town during the day for business would be too extreme a measure, 14,405.
 Weavers and other handicraftsmen in Savadi camp allowed to go to their work in town, 18,986.
Passes for Camp Inmates:
 Bombay: Contacts allowed out from segregation camps on passes, 1356.

CAMPS—cont.

Only one pass system in vogue at Hardwar camp, 9337.

Sakkur: People allowed to visit the town only with passes, 3731.

System of permanent and temporary passes in Government camp at Baroda, 14,619.

Provision of Accommodation, Food, &c. by the People:

Broach: About 1,000 people provided camps for themselves, 15,484, 15,502.

Care taken to see that huts are built with regard to sanitation, 19,515.

Cutch Mandvi: People provided their own camps, 13,377.

Entails no cost in small villages; people build their huts themselves of straw, 24,564.

Hardwar: People provided their own huts, difficulties in inducing them to make a camp on a sanitary plan, 8802.

Hardwar: Poor not relieved by charity received rations from Government; but daily distribution of grain to a fixed amount to all who came to ask for it from the Sadabart reduced the camp charges paid by Government, 9335.

Hyderabad State: Villages supply their own camps at suitable places, of which position largely settled by water supply; large camps inadvisable, 5459.

Jawalapur: People provided their own huts, but crowded them too much together, 9178-9.

Palanpur: 8,000 people built huts for themselves, 13,084.

Wardha: People allowed to put up private camps, 6121.

Wise plan to allow the people to put up their own huts. It costs Government nothing, and satisfies the people, 25,823.

*See Voluntary Evacuation.**Return of People from Camps to evacuated Houses:*

Broach: Evacuated houses sealed up, 15,519.

Dharwar: Measures adopted for the re-admission of the people permitted only after double inoculation, 23,746-7.

If people prevented from returning to houses, plague stops, 8-9.

Impossible to keep people from returning to their houses, 23,171.

Nasik: Impossible to keep the people out of their houses at night, temperature going down to 40°, 14,734.

No cordon around the camps in Palanpur, but roll-call, and people effectually prevented from return to houses, 13,087, 13,164.

People deliberately run risk of return from camps to infected houses in order to see that their property is safe, 22,637-9.

Police patrols and guards necessary to keep people from trying to return to the evacuated houses, but unsuccessful, 13,802, 13,807, 14,229-30.

Prevention of return from camp to village necessary, 20,153, 22,085, 22,604.

Satara: Evacuated houses locked and sealed, and could only be opened at the presence of the authorities, 22,417.

Strict exclusion from evacuated villages depends greatly on the village officers, 22,605.

Supervision in Camps:

Cutch Mandvi: An officer visited the camps each day and brought back cases, 13,423.

Hardwar: A Tahsildar assisted by a patwari appointed superintendent over each camp at, 9334.

Jawalapur: Roll-call of camp occupants made and checked night and morning, 9169.

Karachi: Concealment of cases led to regular inspection of the camps twice a week, 11,886.

Khandesh: Roll-calls made in the camps, 24,557-9.

Khandesh villages: Roll-call proved sufficient without cordon or police in the, 24,562.

Mandvi: From 33,000 to 35,000 persons placed in camp at, and kept under police supervision, 13,423.

No roll-call, but admission and discharge books kept in Mulir camp, 12,498.

CAMPS—cont.

Palanpur: The village patels made daily roll-calls in the evacuation camps in, 13,165.

Rohri: Eight police to guard 840 people in segregation camp at, 12,061.

Roll-call in Nassarpuri camp, Karachi, 12,772. Schoolmasters, village officials, and paid enumerators employed in the Kaira district to take the roll-calls, 14,064.

Staff corps officer charged with the supervision of Malegaon health camp took a roll-call twice a day, 13,777.

Surat: Segregation camp at, placed under supervision of a sergeant-major of gunners, 24,417-9.

Umreth: Census, roll-call, and hut inspection segregation camp at, 14,034-6.

Umreth: Golas in segregation camp guarded by police in, 14,033.

Spread of Plague in Camps:

Ankleshwar: Table showing admissions in the segregation camp, and the number of days after admission when the cases occurred, II. 239.

Bangalore: Plague cases among Sepoys, 4889.

Bangalore: Segregation of contacts at; admissions and deaths in camp, 2621, 2941, 25,028.

Baroda: Nine cases in camp among 11,000 people, 14,624, 14,672-5.

Bellary: No plague cases in, 4403.

Bombay: Details of segregation camps at, III. 117, 118.

Bombay: Very little plague among contact in camp, 1200, 1248, 1355.

Bombay: Very little plague in segregation camps, comparatively, 1355.

Camp, Malir, no case incurred from infection caught in the, 12,438.

Camps, in voluntary camps, unlike houses where four or five people get plague in one house, more than one case not observed in huts, 11,892.

Cases do not communicate infection as much in camps as in towns, 14,659-61.

Cases in camp among people who had been out less than 10 days or had slept away, 17,295.

Contact cases do not spread in camp, 23,349-50.

Cutch Mandvi: Borahs go into camp at, and suffer little, 475.

Cutch Mandvi: Cases numerous among contacts in first epidemic but no record kept, 13,380-1.

Cutch Mandvi: Number of cases in camps in second epidemic, 13,437-40.

Cutch Mandvi: Table of cases in the segregation camps at, 13,542.

Dharwar: Contact or segregation camp at, details of numbers admitted, 1902.

Dharwar district: Mortality in segregation camps very small, 1653.

Dharwar: Details for villages exhibiting effects of evacuation, 23,167.

Disease continues in camp because people are housed in insanitary huts, 22,291-6.

Dropping cases in camp only among people who slept in evacuated houses, 10,191-3, 13,807-13.

Duration of plague after evacuation not dependent on rainy or dry season, 22,704.

Hardwar: Four cases only in contact and segregation camps, 8797.

Hinganghat: Statistics of segregation and other camps, I. 223.

Hyderabad Sind: Eighteen cases in contact and eight or nine cases in other camps, 18,125.

Jawalapur: Among 13,000 people taken in camp at, only 69 cases during the whole period, 8796-7.

Jawalapur: Huts too close together, and overpopulated: otherwise there would have been less plague, 9178.

Jawalapur: Table of average weekly population of contact camps at, and weekly number of plague attacks, II. 45, a.

Karachi: A case in camp traced to visit to town, 12,776.

Karachi: A few cases where huts too close together, 11,263. •

CAMPS—*cont.*

- Karachi: Kiamari: Only three plague cases in Government health camp at, in 1897, 11,969.
- Karachi: Plague in health camp as bad as in the most infected parts of a big town, 21,752.
- Karachi: Plague statistics from the Narsarpuri camp in 1897, II. 155.
- Karachi: Statement of total attacks and mortality in voluntary camps, from May 1st to August 14th, 1898, 11,893.
- Karachi: Table of average population in contact camps at, with the number of plague cases and deaths, 11,628, 11,671-2, II. 148, 155.
- Karachi: Table of plague mortality in the unevacuated portions of the town, from April 1st to November 4th, 1898, II. 154b.
- Khari, near Bandra: No cases among about 1000 people in camp, 18,936.
- Kotri: Cases in camp due to communication with the town, 12,645.
- Kotri: Only one plague case in contact camp at, 12,570.
- Kotri: Statement of cases in the various camps at, 12,643.
- Molagavalli: One thousand five hundred people go out into the fields at; cases continue, 5000-4.
- Mysore: Statement of cases in contact camps, III. 276.
- No fear of plague becoming epidemic in camps, 18,391.
- Palanpur: Details for villages showing effects of evacuation, I. 199 (13,159).
- Panjab: Details of cases occurring more than 20 days after evacuation in several villages, II. 81-2 (9981), II. 105-6 (10,384), II. 116-7.
- Panjab: Information concerning persons attacked with plague more than 10 days after evacuation of the villages, (10,603) II. 115-6.
- Panjab, Mahlgaha: Statistics relating to history of plague, II. 103-4.
- Panjab: The majority of cases occurring 20 days after evacuation ascribed to the people having returned to the village surreptitiously, 10,515-28.
- Panjab: Want of cordons around the villages cause of plague in the camps, 10,758.
- People in camp infected by re-visiting their houses, 9, 11,890, 12,230, 12,795, 13,456, 13,729, 13,807, 18,075, 22,601, 24,155.
- Plague dies out in camp in a week, 20,451.
- Poona: Particulars of cases in camp among the regiments, 21,252.
- Poona: Statement of cases in segregation camp, 21,539.
- Poona: Statement of cases in segregation camps since February 14th, 1899, 21,332-5, III. 317.
- Porbandar: Statement of cases in contact camps, 13,722.
- Porbandar: Table showing daily attacks and deaths among the Kharwas from date of evacuation, II. 221.
- Porbandar: Table showing number of cases in evacuation camp, II. 253a.
- Proper organisation of segregation camp and proper methods of disinfection exclude the possibility of a camp epidemic, 18,391.
- Sholapur camp kept entirely free from plague, 20,234.
- Sholapur: Table of cases among the evacuated population, 23,940.
- Sholapur: Table showing progress of plague week by week in the city and health camp, III. 109.
- Sirohi: Cases in camp at, 9836, 9865, 9877.
- Surat: Camp cases occurred in those who visited the town, 15,776.
- Surat: Majara Health Camp, average population, 3,754; only 15 cases in camp, 15,775.
- Surat: Table showing mortality in health camps at, II. 304.
- Timmencherla, no cases in camp at, 4129.
- Wardha: Statistics of segregation and other camps, I. 224.

CAMPS, OBSERVATION:

- Dharwar: Observation at, for people from infected localities, 1927.

CAMPS, OBSERVATION—*cont.*

- Dharwar: Observation camps closed November 1898 at, as useless, owing to spread of infection in district, 1930.
- Hardwar: Pilgrims from infected areas conducted to the special camp at Hardwar, and medically inspected morning and night, 8751.
- Hubli: 10 days' detention for all arrivals in, 2429.

CAPSULE:

- Bacillus of plague not found with a capsule, 5791-8714.

CARBOLIC ACID:

Clothes, Disinfection of:

- Clothing disinfected at Ankleshwar by placing it in carbolic acid lotion for half an hour or simply boiling it in water, 14,255-7.

Efficacy:

- Action of the phenols and their allies on the bubonic microbe, II. 5.
- Bacillus cannot live in Haffkine's fluid because of the carbolic acid, 8411.
- Bacillus of plague killed by two per cent. carbolic acid in three minutes, 27,401.
- Bacillus of plague killed by $\frac{1}{2}$ per cent. of carbolic acid, 105.

Experiments with:

- Experiments on the effect of carbolic acid in destroying micro-organisms on a wall gave no satisfactory results, 26,351.
- Results of tests with carbolic acid, II. 5.

Inefficacy:

- Plague bacillus not sensitive to the action of carbolic acid, II. 5, a.
- Perchloride of mercury at Calcutta, carbolic acid given up in favour of, 6528.
- Phenyle more active than carbolic acid on the microbe of plague, II. 5.

Person, Disinfection of:

- Carbolic acid in solution strong enough to kill bacillus would hurt people so much that they could not stand it, 4305.
- Persons disinfected in carbolic bath at Ahmedabad, 13,896.
- Plague patients receive carbolic bath on leaving hospital to disinfect them, 557.
- Poona: Persons on entering camp bathed in carbolic at first, but, at a later period, in phenyle, 21,272-4.

Where used:

- Common Jail, Bombay, used in, as disinfectant, 20,344.
- Duman: Disinfection by crude carbolic acid diluted with water, in strength of 1 in 40, 13,629, 16,409.
- Palanpur: Carbolic acid resorted to as disinfectant in, 13,091-4.

CARBONIC ACID GAS:

- Experiments on the growth of the plague microbe in air with admixture of carbonic acid, 18,893.
- Experiments to recover the plague bacillus from earth by cultivation in carbonic acid gas, 26,144, 26,233-4.
- The carbonic acid method the only successful way to isolate bacillus of plague from earth, 26,179.

CARBUNCLES:

- Carbuncle, which in one case was point of entry of infection, contained multitudes of bacilli of plague, 6910.
- Carbuncles observed, 7302, 12,875.
- Details of 10 cases of plague with carbuncles, 12,366-74.
- Lymphatic glands enlarged in about half the cases of primary carbuncles, 12,487.
- Microbes resembling plague bacilli discovered by microscopical examination of the serum of a plague carbuncle, 12,377.

CASE MORTALITY:

- Ahmedabad: 66.6 per cent. of the imported cases proved fatal, 13,907.
- Ankleshwar: Totals of cases and deaths in the town and district, 14,214.

CASE MORTALITY—*cont.*

- Baroda Cantonment: Cases and deaths, 15,424-6.
 Baroda City: Total cases and deaths, 14,637.
 Baroda State: Number of cases in villages with results, II. 517, App. R.
 Bhiwandi: Attacks and deaths, 14,432.
 Igatpuri: Table of cases and deaths, III. 99.
 Ilkal: Table of cases and deaths, III. 90.
 Jawalapur: Number of cases with results, 9539-40.
 Kotri: Per-centage of recovery cases, 39·8, 12,638, 12,649.
 Palanpur: Total attacks and deaths, 13,159.
 Panjab: Cases and deaths, 10,330.
 Panjab: Jullundur district: Plague mortality, 62·73 per cent., 10,205.
 Porbandar: Total of cases with results, 13,692.
 Mortality greatest in septicæmic, next in pneumonic, and least in bubonic plague, 12,391.
 Remarks of the Bombay Plague Research Committee on case mortality, I. 332.
 Satara: Mortality during first epidemic, 66 per cent., 22,259.

See Hospitals.

CASTE AS AFFECTING LIABILITY TO PLAGUE:

- Ankleshwar: Table showing proportion of attacks in the principal sub-classes among the Hindus, II. 246b.
 Ankleshwar: Table showing number of cases classified according to the population of each caste, II. 246a.
 Bangalore: Table of number of seizures and deaths by races and castes in the Civil and Military Station, I. 109, 25,015.
 Bangalore Hospital: Relative mortality according to castes, 2913, 2923.
 Baroda State: Plague cases according to sex and caste in, 14,989, 15,219.
 Bombay Hospital: Table of mortality among castes and races, I. 391.
 Bombay, Parel Hospital: Incidence of cases by sex, age, and religion, 7221.
 Calcutta: Incidence of plague by age, race, and sex at, I. 474.
 Calcutta: Table of attacks and deaths according to the classes of the population, I. 474.
 Caste does not influence mortality, 10,210.
 Deaths among different castes, I. 306.
 Disease spreads in circles of castes, 16,006.
 Immunity of particular castes depends on their habits as to fresh air and cleanliness, 22,274.
 Incidence of plague on various castes, I. 378.
 Karachi: Statistics of plague cases in the hospital, with reference to caste, 12,353.
 Karachi: Table of number of cases and deaths, according to castes, in the municipal limits, II. 157.
 Karachi: Table showing, by castes, attacks and deaths of plague during the last six week of the epidemic, II. 157.
 Mysore City: Castes and plague in, 25,015. *
 No difference in the mortality of people from habits, caste, or age, 10,210.
 No difference in the predisposition to plague of certain classes, 16,315.
 Observation on immunity in different castes during the present epidemic, 22,264-7.
 Observations on plague incidence in different castes at Bombay, 17,681-5.
 Porbandar: Statement showing plague cases and deaths among the various communities from May to November 1898, II. 222.
 Spread of plague at Dharwar and Hubli was not marked by an inter-connexion of castes, 1715-7.
 Statistics of plague cases in the Sassoon Hospital bearing on caste, sex, and position of buboes, 12,897.
 Surat: Castes and plague at, 2046-8.
 Surat: Number of plague cases according to castes, 15,632-3.
 Surat: Table of mortality from plague among the different castes, II. 295.
 Umroth Town: Table of total attacks and deaths by caste, sex, and age, II. 233.
 Very dirty classes, such as Dhers and Mangs, not so liable to plague, 5478.

See Acharj.

- „ Banniahs and Traders.
 „ Bhatias.

CASTE AS AFFECTING LIABILITY TO PLAGUE—*cont.*

- See Bbils.
 „ Borahs.
 „ Ohumars.
 „ Dhers.
 „ Dhobis.
 „ Domes.
 „ Fakirs.
 „ Ganchi.
 „ Golas.
 „ Infected places, *particulars regarding*.
 „ Inoculation with Hallkine's plague prophylactic.
 „ Jains.
 „ Khoja Community.
 „ Mahars.
 „ Mangs.
 „ Memons.

CAT:

Affected by Plague:

- Ahmednagar: Cats seen suffering from plague, 24,310.
 Ahmednagar: Overran with cats having open buboes in their necks, 18,900.
 Bandra: Cats had plague, 19,095.
 Baroda: Glandular swellings below the jaw noted in a cat, 14,641.
 Bombay: Cats suffered from plague, 1187-8, 20,423.
 Outch Mandvi: Cats died of plague, 13,565.
 Kaira: Cats died of plague, 14,079.
 Karachi: During the first epidemic cats were found with buboes and killed in large numbers, 11,311, 11,839.
 Umroth: Suspicious deaths among cats, 14,079.

Discovery of Bacillus in:

- Found in cats with typical plague symptoms, 20,424.
 Involution forms of plague bacilli seen after death at the seat of inoculation in a cat and guinea pig, 26,227.

Immunity from Plague:

- Cats inoculated with large doses die of plague, 26,316.
 No evidence that cats are affected by plague, I. 378.

Infection by:

- Masur: Instance in which plague was probably caught from a cat, 14,484.

Reaction of Plague Virus in:

- Cat inoculated with plague virus showed more local reaction than any other animal, 26,316.

Theory that Plague not recently imported to India:

- Plague cases said to follow on a cat suffering from bubo in Bombay in 1893, 18,276.

CATTLE:

Diplo-Bacteria found in:

- Diplo-bacteria similar to those found in plague rats discovered in the blood of cattle during the epidemic among them at Calcutta in 1897, 28,942.

Disease among:

- Foot-and-mouth disease among cattle just before plague outbreak in Bombay, 901.
 Great mortality among cattle in Bombay in middle of 1896 27,016.
 Mesenteric glands were perfectly black in animals dying of the Calcutta epidemic in 1897, congested and enormously enlarged, 26,944.
 Outbreak of a disease among cattle, the symptoms of which were different from rinderpest, in January 1897, in Calcutta, 26,941.

Housing of:

- All villagers inclined to keep cattle and manure close to their houses, 7922.
 Baroda: Cattle and men live all under same roof, 15,193.
 Cattle in one enclosure with living rooms at Pali, 6423.

CATTLE—cont.

- Cows kept in filthy state in Kumaun dwelling-houses, 6163.
 Catch Mandvi: Cattle kept by the people of, in the lower rooms of the houses, 13,353.
 Dharwar district: Kept in the dwelling-houses in all the villages in the, 23,180, 23,431, 23,518.
 Housing of cattle in human dwellings a confirmed habit which cannot be altered, 7922.

CENSUS.*Dharwar:*

- Differences between figures of census and inoculation registers, 1764-7.
 Error in statistics, because inoculated people come in from the huts outside to die in their houses, 2351-9.
 Lowest population of Dharwar 9,000, 1972.
 Margin of error in the census returns of inoculated and uninoculated, on account of the people having left the town, 1974-2001
 Weekly census in Dharwar since October 19 1898, 1763.

Gadag:

- Census taken under the directions of Mr. Vincent, and checked once a week by supervisors, 23,832-6, 23,853-62.

Hubli:

- Census checked every week by supervisors, who each had a ward of about 100 houses; tested for the whole of Hubli by one European officer, 3174-8.
 Census figures obtained by an enumeration and subsequent deductions and additions, and approximately correct, 3123-30, 3166-7.
 Census figures probably under the figures of actual population; lowest population of Hubli probably 6,000 to 8,000, 2488-92, 2518-9.
 Census kept up to date by daily inquiries regarding arrivals and departures by supervisors, 1959.
 Census made once for all, and verified periodically by additions and subtractions to keep it up to date, 2523-7.
 Census stated whether persons were inoculated or not, and, in spite of difficulties, was fairly accurate, 3179.
 Census taken in December 1897, under the directions of the Collector, no European being employed in connexion with the taking of it, 20,172-6.
 Census taken weekly, but attempts made at concealment, 2520-1.
 City divided into 10 sub-divisions, each division having about 10 supervisors who each looked after 90 or 100 houses, 19,796-8.
 Difference between Captain Leumann's figures in his inoculation report and census figures due to the fact that the former refer to periods which do not accurately agree with those of the census, and were corrected by special inquiries, 25,143-50.
 Discrepancies between figures in census and figures given by Captain Leumann in his Report on Inoculation in Hubli, 3056-65.
 Each supervisor took the census for 100 houses, probably taking a week over the work, 20,181-3.
 Lowest uninoculated population, about 3,000 or 4,000, 19,849-51.
 Margin of error in statistics of inoculated and uninoculated, on account of people having left the town, 1987-2001.
 Number of uninoculated persons probably never went below 5,000, 23,461-2.
 Original census kept up to date by subtractions for deaths and departures, and additions for arrivals; result fairly accurate, 19,841-6.
 Plague census taken first in October 1897, in exactly the same way as the Imperial census, and figures fairly accurate; the uninoculated population not as great as 5,000 at its minimum, 25,157-60.
 Rains prevented supervisors from doing their work properly, and many, being volunteers, ran away from fear of plague, 1589.

CENSUS—cont.

- Supervisors check the census every week, each having a ward of about 100 houses, 1623, 1665-6.
 Supervisors visited houses in their wards every day, the town having 12,000 houses, and each ward having about 100 houses, 20,165.
 Uninoculated persons tried to keep their names from being recorded in the census register, 19,890.
 Uninoculated persons had no inducement to get registered, 3169-71.
 Uninoculated population arrived at by deducting numbers of inoculated reported to be present from census returns of total population, 2490, 2523.
 Ward supervisors went to every house once a week, to check the census; returns, when tested, found fairly accurate, 19,870-3, 198,91.

See Roll-call.

CHAMARS:

- Chamars frequently attacked, as they are not only workers in leather, but also the servants of the village; and hence in close contact with plague patients, 10,319.

CHARACTER AND PREPARATION OF HAFFKINE'S PLAGUE PROPHYLACTIC.

See Haffkine's plague prophylactic.

CHARACTERISTICS OF BACILLUS OF PLAGUE.

See Bacillus of plague.

CHILDREN:*Clinical feature of Plague in:*

- Clinical description of plague case in a child, 7587.
 Convulsions prominent symptom in plague-stricken children, 5075, 12,987.
 Half the number of cervical buboes occur in children under 12 years of age, 12,397.
 Prognosis better than among grown-up people, I. 352.
 Temperature rises more quickly and is greater in children than in adults, 20,689.

Medical Treatment of:

- Administration of carbolic to children causes gastritis, 11,934.

Mortality of Children:

- Infinitesimal death-rate from plague among children under one year of age, 11,815.
 Jullundar District: List of villages where children under two years suffered from plague, II. 103.
 Karachi: Many die after epidemic at, 4310.
 Karachi: Table showing infant mortality after first epidemic of plague, II. 156.
 Karachi: Table showing ordinary mortality of infants from 1894-8, II. 156.
 Mortality from measles and influenza in Poona heavy among children under five during January and February 1899, 25,838.
 Pneumonic plague always fatal in, 12,314.
 Surat: Plague mortality among children 40 per cent., 15,643.
 Surat: Table of mortality among children from small-pox and measles, II. 301.

Plague and Children:

- Baby at the breast of plague patient escapes infection, 7497.
 Cases of children under two years of age in the voluntary camps at Karachi, 11,890.
 Childhood chiefly immune from plague, 14,395.
 Children at the breast little liable to the infection, 10,329.
 Children under one year of age generally escape plague, 11,739, 11,815.
 Mild case of plague in children, 9467-75, 10,338.
 More or less immune from plague attacks or fatal terminations, 23,061.
 Only one case seen among infants, 5926.
 Plague rarely attacks young children, 15,446.

CHILDREN—cont.

Very few children under five contract the disease, 16,510.

See Age.

„ Inoculation of Haffkine's plague prophylactic: *Age and inoculation*; *Bars to inoculation*; and *Dosage*.

CHLORINE:

Plague bacillus killed by freshly electrolysed water with chlorine in solution, 3632.

CHLORO-NITROUS OZONE:

Used as disinfectant: statistics of results, II. 258.

CHOLERA:*Decrease of:*

Ahmedabad: Cholera has disappeared from, since the introduction of the new water supply, 13,962.

Calcutta: Cholera diminished by introduction of good water into, 6998.

India: Cholera in, much diminished of late years, 8061.

Mysore: Cholera has disappeared since the new water supply was introduced, 25,129.

Disinfection:

Very little disinfection done in cholera epidemic. The only provision made is the distribution of medicines, 8015-6.

Notification of:

Promptly notified, 7818.

Reports of cholera cases more easily obtained than those of plague, 8876.

Outbreak of:

Appeared late in Calcutta in 1898, and much less than usual, 6878.

Poona: Cholera and plague at the same time during the first epidemic, 21,679.

Surat: Sudden outbreak of cholera and plague in jail, 15,789.

Severity of:

In cholera, as the outbreak proceeds, cases become milder; the reverse holds true of plague, 6938.

CIVIL MEDICAL DEPARTMENT:

Assistant surgeons are trained at Calcutta or Lahore, generally intelligent men, 7775.

Civil Medical Administration in the Bombay Presidency, system of, 17,147-56.

Doctors do two years' army medical work before going to Civil Department, 7903.

Emergencies: Methods of securing additional help, 7967.

Hospital assistants officer small hospital and dispensaries, and are mostly educated in the vernacular, and have only moderate qualifications, 7773-82.

Military duty, liability to, does not deter men entering the Indian Medical Service, 7953.

Number and duties of medical officers in the N.W. Provinces, 8928, 8971.

Officer in charge of dispensary might be utilised for checking returns of mortality, 10,292.

Organisation of medical body in India, I. 272-86.

Promotion: Medical officers if put to special scientific work would lose best chances, 8011.

Question of control over Civil Surgeons by Head of Civil Medical Department, and also by Head of Sanitary Department, 7960-6.

Staff insufficient to deal with plague; local and temporary men were employed, 7915.

See Civil Surgeons.

„ *Health Officers.*

„ *Sanitary Department.*

CIVIL SURGEONS:

Civil Surgeons greatly assist the Municipalities with their advice on sanitary measures, 17,204.

Duties of the Civil Surgeon of the Bombay Presidency and the Civil Surgeon in other parts of India, 17,140-4.

CIVIL SURGEONS—cont.

Duties of the Civil Surgeon of the district, 10,512.

Duties of Civil Surgeon in ordinary circumstances do not go beyond suggesting improvements in sanitation, 22,507.

Many pressing calls on Civil Surgeons, so that they cannot properly scrutinise death returns, 7811-4.

Multifarious duties of the Civil Surgeon leave him no time to direct plague measures, 7730, 7912-4.

No longer recruited from Uncovenanted Medical Service. The vacancies filled up either by Military or Civil Assistant Surgeons, 7731.

CLIMATE.

See Meteorological conditions.

CLINICAL FEATURES OF PLAGUE:

Aberration of mind a symptom of plague, 4547.

Aphasia a symptom of plague, 21,029.

Aphasia not noted among the patients in the Sassoon Hospital, Poona, 12,905.

Appetite, varied, 20,841.

Arthritis in 4 or 5 per cent. of the cases, 20,907.

Blisters observed, in a few cases all over the body, 20,873, 21,020.

Cardio-vascular symptoms: Peculiar symptoms in circulatory system a clinical feature of plague, 20,800.

Cardio-vascular symptoms: Throbbing of the carotids a clinical feature of plague, impulse at the apex more diffuse than normal, I. 380.

Central deafness, 20,793.

Cerebral symptoms grave in cases where no bubo appeared, 12,897.

Convulsions in children, 20,786.

Convulsions prominent symptom in plague-stricken children, 5075, 12,987.

Delirium, I. 380.

Delirium, character of, 20,756-8.

Diarrhoea generally just before death, 20,850. I. 380

Disturbances in the circulatory, respiratory, digestive, urinary, and reproductive systems, I. 381.

Dysentery, a clinical symptom of plague, 511.

Epistaxis seen in plague cases, but only if complicated with relapsing fever, 20,809.

Erysipelas noted especially in cases of cervical buboes, 20,723.

Expression: peculiar facial expression a clinical feature of plague, 12,398, 15,294, 20,673.

Gangrene and blebs observed in Daman, 16,750.

General description of clinical symptoms of plague in a child, 7587.

General description of clinical symptoms in the different forms of plague, III. 44, 1386, 20,404-7, I. 379.

General description of cases in Sassoon Hospital, Poona, 12,897-905.

General features of plague cases, I. 58-63.

Hæmorrhage in the bowels and stomach, 20,854.

Hiccough persistent, defying all treatment, 20,848.

Leucocytosis a clinical feature of plague, 20,803.

Liver not enlarged, 12,412.

Liver in bubonic plague somewhat large and congested, 10,421.

Locomotor system: staggering gait a characteristic early symptom of plague, 12,898, 15,294, 20,668.

Mania in two cases accompanied an attack of plague, 20,791.

Melœna, 20,852.

Meningitis, 13,046.

Nausea a clinical feature of plague, I. 380.

Nervous disturbances, 12,987.

Nervous prostration, I. 379.

Nervous symptoms most prominent among Europeans in Sassoon Hospital, 12,934.

Onset and progress differ enormously in different cases, I. 351-2.

Paralysis, I. 380.

Paralysis and hemiplegia, 16,766.

Partial laryngeal paralysis, I. 380.

Petechiæ observed all over the body, like a rash, but not a characteristic sign of plague, 20,883.

Petechiæ not observed in pneumonic form, I. 369.

Position: peculiar flexed position of patients 7015.

Pulse feeble and dicrotic, but of varying character in different patients and different stages of an illness, 20,800.

CLINICAL FEATURES OF PLAGUE—*cont.*

- Pulse similar to that of aortic regurgitation, 21,035.
- Pulse small, easily compressible, and frequent, 12,398.
- Renal complications: albumenuria, 10,422, 12,409, 15,300.
- Renal complications: hæmaturia, 15,307.
- Respiration hurried and oppressive in cases without bubonic swellings, 12,897.
- Respiration hurried, I. 380.
- Respiration generally hurried, voice disconnected and slurring, 12,399.
- Respiration in pneumonic cases much more hurried than in other forms of plague, 12,914.
- Skin: cellululo-cutaneous necrosis, 20,875.
- Skin: cutaneous manifestations of plague, 20,868-73.
- Skin: no local affections of the skin observed in cases of plague, 9571.
- Skin: phlegmonous condition of the skin in cases when no bubo appears, I. 351.
- Skin dry and harsh in plague, I. 380.
- Smell: bubonic cases characterised by bad, 7015.
- Smell: peculiar, 20,892-4.
- Speech: aphonia very common, 12,402, 12,901, 16,527, 17,581.
- Speech: eight cases of absolute aphonia; recovery, 12,400.
- Speech: no aphonia noted among patients at Sassoon Hospital, Poona, 12,905.
- Speech: thick, I. 379, 15,295, 20,675.
- Speech: voice disconnected and slurring, 12,399.
- Spleen: no abnormal symptoms in spleen, 12,411.
- Spleen in bubonic plague very much enlarged and congested, 10,421.
- Symptoms of the enteric form, 18,543-9.
- Symptoms of typical cases at Wardha, 6291.
- Table showing special symptoms in 100 consecutive fatal cases and 100 consecutive recovery cases, II. 176b.
- Table showing special symptoms in 100 consecutive fatal cases and 100 consecutive recovery cases, II. 176b.
- Tetanus observed in plague cases, 20,770.
- Thirst marked, 20,841-3.
- Tonsil: pseudo-diphtheritic membrane on, 20,813.
- Urine diminished in quantity, of high specific gravity and intensely acid, I. 38c.
- Vomiting, 8221, 12,398, I. 380.
- Vomiting, bilious, 20,844.
- See* Bubonic plague.
- „ Bullæ.
- „ Carbuncles.
- „ Diagnosis.
- „ Eye.
- „ Glands.
- „ Glandular fever.
- „ Inoculation: *Effect on clinical symptoms.*
- „ Lesions.
- „ Lungs.
- „ Œdema.
- „ Pneumonic plague.
- „ Post-mortem appearances.
- „ Pregnancy.
- „ Prognosis.
- „ Pulse.
- „ Recurrence of plague in the same persons.
- „ Relapses.
- „ Septicæmic plague.
- „ Skin.
- „ Sputum.
- „ Temperature.
- „ Tongue.

CLOTHES:

Bacillus of Plague: isolation from clothes:

- Failure to isolate it from clothing, 619-20, 635, 995, 8627-8, 25,347-51.
- Never found in clothes worn by plague patients, 25,347.
- No method for identifying the microbe in articles of clothing, 8537.
- Once found in a piece of soiled matting which had been used by a plague patient, 35,393-6.
- Plague cultures said to have been made from clothes, 7559.

Bacillus of Plague: vitality in clothes:

- Bacillus of plague kept alive in clothes indefinitely, 10,094.

CLOTHES—*cont.**Disinfection of Clothes:*

- Comparison between case of evacuation with disinfection and case of evacuation without disinfection at Poona proves value of disinfection, 21,251-7.
- Disinfecting of personal clothes, very useful, 10,921, 23,187.
- Effect of disinfecting clothes at Kalankot and Gharibabad, 11,144, 11,162.
- Effect of disinfecting clothes in Shikohpur, Panjab, and other places, 9994, 10,145-6.
- In Kankhal and Jawalapur infected effects taken to camp without disinfection, and soon ceased to be infective, 9294-7.
- Natives conceal infected clothes in order to prevent their disinfection, 8780, 9224, 9256, 24,393.
- Personal disinfection more disagreeable to the natives than the disinfection of clothes, 21,510.
- Villagers bribe disinfectors to save their kit from being put into perchloride, 21,174-5.
- See* Boiling.
- „ Burning.
- „ Camps, *Disinfection in.*
- „ Carbolic Acid.
- „ Jeyes' Fluid.
- „ Perchloride of mercury.
- „ Phenyle.
- „ Port Regulations.
- „ Railway measures.
- „ Steam.
- „ Sun.

Infectivity of Clothes:

- Case of probable infection by clothes, 320.
- Case of infection at Karachi through clothes that had three months before belonged to a man who died of plague, 11,961.
- Case of infection through effects of a dead man, 2107.
- Cases of infection at Dharwar Hospital from pneumonic sputum on clothes, 1892.
- Cause of plague case at Multan traced to clothes sent from Bangalore, 10,871-99.
- Clothing brings infection to Hardwar, 6435.
- Clothing destroyed, and no further infection in Bangalore Hospital, 2394.
- Clothing stolen from dead bodies infected a whole family at Satara, 22,024.
- Clothes, one of the only factors which has proved infective, 21,717.
- Danger of infection through clothes much less than through bags containing grain, in which rats would nestle, 994.
- First case at Kariam traced to infection by clothes, 10,394.
- First case at Kulewal traced to infection by clothes, 10,747.
- ✓ Infection carried to village near Satara by clothes stolen from bodies of the dead, 22,527.
- Infection carried by clothing in Hubli, 3121.
- Infection carried by wearing apparel, 8985-90.
- Infection carried by property from infected houses, 24,391-8.
- Infection conveyed by clothes from plague corpses, 23,011.
- Infection conveyed by clothes stolen from plague patients by temporary attendants, 23,957.
- Infection from clothes given to Mahars, 24,034.
- Infection probably due to clothes, 2107-14, 9271, 10,081, 10,082-93, 10,397-8, 10,754, 11,333, 12,712, 12,731, 12,997-8, 14,347, 15,170, 15,202, 17,994, 18,129, 18,502, 19,028, 20,066-74, 20,076, 22,572, 22,878.
- Plague introduced at Hardwar in the clothes of a person from Karachi, 8911.
- Plague infection may harbour for a considerable time in clothes kept in the dark; case in camp on opening box of clothes brought out seven days before, 9483.
- Probable case of infection by clothes at Thana of Parsce hdy, 320.
- Rats, clothing, and some unknown agent in the retail grain shops are the chief causes of the spread of plague, 11,278.
- Supposed case of infection from clothes at Rahou after the people returned to the town

CLOTHES—cont.

free from plague, having been 28 days in camp, 10,562.

See Acharj.
,, Dhobis.
,, Domes.

Infected Clothes concealed :

Natives hide infected clothes and this probably causes spread of plague, 8780, 9224, 9256, 24,393.

Opinion that Clothes by themselves not very infective :

Clothing cannot spread disease without human agency, 10,328.

✓Clothing not very infectious to hospital attendants, 237.

COLD WEATHER :

Baroda: In the cold weather plague showed a tendency to spread a little in camps, 15,111.

Baroda: People crowd their houses in the cold weather and plague is then worst, 15,240-3.

Bombay: Epidemic increases during the cold weather owing to the people sleeping more indoors; 350,000 people sleep in the streets in the hot weather, 26,104.

Bombay: In cold weather natives sleep in their houses huddled up together and are more liable to plague, 550, I, 378.

Bombay: Virulence of the plague attributed to the excessive cold weather, 1032.

Bombay: Virulence of the plague in the third epidemic, and the prevalence of the pneumonia form, must be attributed to the excessive cold weather, 17,888.

Broach: The habit of the people to sleep outside their houses in the hot weather the reason that the plague remained dormant in May and June, 14,385.

Kolaba: Plague increased in each of the epidemics in the cold weather, dropped as the hot weather came on; during the rains there were no cases at all, 17,650.

North winds prevailing in cold weather cause that part of the town which the wind reaches first to be first attacked by the disease, 10,844.

COLI-BACTERIUM :

Plague bacillus appears to be at antagonism with bacterium-coli, 1531.

Tests on the effect of bacillus coli on the growth of the plague bacillus proved it to have some retarding influence, 26,150.

CONCEALMENT OF PLAGUE CASES :

Causes of :

Disinfection, wholesale, and evacuation led to concealment of cases at Surat, 16,004.

Enforcement of restrictive measures led to the secreting of the dead and the running away of the people, 17,864.

Evacuation impossible in a big city; only leads to concealment of cases and frightens people away, 7854, 8272.

Female cases concealment of, tends to make statistics untruthful, 6576.

Ignorance, concealment of cases mostly due to, 16,137, 17,949.

Plague measures, objection to, so great that people will not report cases, 7824.

Police activity in discovering cases objected to, I, 469.

Segregation leads to concealment of cases, 2672, 3390, 3480.

Too strict measures and compulsory segregation would lead to concealment of cases, 12,322.

Undiscovered cases most dangerous source of infection, 10,994.

Worrying the people about sending their patients to hospital leads to concealment, 25,806.

Extent of :

Bandra: General disinclination in the district to give information, 18,956.

Bangalore: Concealment even among the officials and the more intelligent part of the people, 3288.

CONCEALMENT OF PLAGUE CASES—cont.

Bangalore: Greatest concealment among Muhammadans, 2993, 25,022.

Bangalore: Information of cases usually not given till after death, 2604, 3348.

Bangalore: Serious concealment and throwing out of dead bodies due to application of segregation and plague measures, 2593, 2604, 2671, 2696, 3223, 3282.

Bombay: Cases concealed, 487-9, 4033.

Bombay: Dead bodies spirited away, 10,954.

Bombay: Difficult to get information in Muslim districts, 1349.

Bombay Plague Committee, great difficulty in ascertaining number of plague cases under the, 17,862.

Calcutta: Low mortality in, not attributable to concealment of cases, 6758.

Calcutta: Probable concealment makes statistics unreliable, 6555, 6576.

Cases concealed and carried from house to house, 489, 6599, 14,603, 16,229-32.

Daman: Bodies found in an advanced state of decomposition, 16,392.

Guntakal: Concealment of cases by Muhammadans, 4197.

Hubli: At beginning cases fully reported, but system broke down later, 19,799-803.

Hubli: Dead bodies found in the streets, 3079-81.

Hubli: Good many cases escaped record, 1590.

Hubli: In camps deaths escaped record, 1931.

Hubli: In one house 9 out of 13 inmates died of plague before the authorities knew the house was infected, 23,383.

Hubli: Plague mainly notified after death, 19,836.

Kankhal: Cases in Muhallah camp reported, but at Jawalapur efforts were made to conceal them, 9345.

Karachi: Concealment of deaths impossible, 11,183.

Karachi: Concealment of cases led to regular inspection of the camps twice a week, 11,886.

Karad: Plague concealed for two months, 21,060.

Khandraoni: Plague existed in the village for two months before it came to the notice of the authorities, 9697.

Panjab: Organised arrangements for concealment of cases in the villages, 9948-57.

Poona: Concealment practically impossible, staff being very strong, and working from daylight till dark, 10,913.

Robri: People hiding with their sick in the date plantations hunted out by mounted men, 12,117.

Measures to prevent :

Belgaum: Non-removal of patients and contacts in second epidemic caused people to give accurate information of cases, 23,138.

Bombay: Under the present system of not removing patient to hospital except by the desire of his friends, concealment of cases is the exception, 25,815.

Bulsar: Concessions given to inoculated prevented the concealing of cases, 16,291.

Mysore: Under voluntary system cases mostly detected, 24,969.

Surat: Concealment punished by removal to general instead of caste hospital, I, 257.

Surat: Concealment of cases threatened with removal to Government hospital, 13,157.

Surat: Segregating neighbours of plague cases not reported, resulted in voluntary report of 230 out of 281 cases, 16,029-32.

Surat: Ward system broke up the conspiracy of silence as to plague, 16,004.

CONSTITUENTS OF HAFFKINE'S PLAGUE PROPHYLACTIC :

See Haffkine's plague prophylactic.

CONTACTS :

Difficulty in securing :

Difficult to trace contacts, 18,934.

Impossible to get hold of the contacts in a crowded chawl, 8261.

✓Vigilance Committee fail to remove contacts, 7610.

CONTACTS—cont.*Not removed :*

- Bombay: District medical officers have no power to remove contacts, 7610.
 Bombay: Not a single case among contacts in, after thorough disinfection of room where patients had died, 25,803.
 Daman: Contacts left in the house, 16,369.
See Treatment of the sick in their own houses.

Number segregated :

- Average number of people to be segregated, four or five per case of plague, 310.
 Bangalore: Instead of three or four contacts per family less than two found on the average, 3351.
 Bombay: Only 400 persons in contact camp; if removal of contacts properly worked the number ought to have been 2,000, 10,953.
 Bombay: Only one contact secured to four cases of plague, 4031.
 Cutch Mandvi: Seven or eight segregated per case, 493.

Segregation of :

- Contacts should be kept in a camp by themselves if possible, 23,346.

See Camps.

„ Segregation.

COPPER SULPHATE :

Result of tests with metallic salts, II. 6.

CORDONS :*Cordon arrangements and details of :*

- Daman and British India: intercourse between, periods in which stopped and permitted, 15,964-5.
 Daman: Cordon removed in November 1898, 16,609.
 Daman: Frequenting of Portuguese liquor shops not forbidden to British subjects when plague discovered in Daman, 15,967-8.
 Daman: From April 1897 to October 1898, inter-communication permitted with passes, and of 2768 persons detained four developed plague, 15,965, 15,993-4, 16,609.
 Daman Frontier: Description of cordon operations, 15,979.
 Daman: One hundred and thirty-nine persons arrested for attempts to break the cordon, 15,989.
 Daman: Plague did not spread, even before cordon put on, as villagers themselves refused admittance to suspicious persons, 15,964, 16,000.
 Daman: Salt cordon increased during plague, 15,969.
 Daman: Three lines of protection on British side of frontier: salt cordon, police, and villagers, 15,977.
 Hubli: Chawis cut off by cordon of armed police, 1581-4.
 Kaira: Strict measures to prevent communication between Kaira district and the Gai-kwari territories by the Mahi river, 14,015.
 Karachi: Advantageous for imposition of cordon, shut in by the desert and the sea, 11,297.
 Karachi: Cordon at, 11,240, 11,297.
 Karachi: Malir camp surrounded by thorn fence and guarded by police and sepoy, 12,441-45.
 Karachi: Nine plague cases stopped by the cordon, 13,433-4.
 Khandraoni: Cordon broken by one person, 9669.
 Khandraoni: Villagers placed under a cordon, 244 soldiers for 435 people, 9648, 9669, 9683-4.
 Kotri: Cordon regulations at, 12,605-19-37.
 Kotri: Cordon placed three days after second outbreak, 12,603.
 Kotri: No one could get away without a pass, 12,630.
 Kotri: Railway quarter not included in cordon, 12,620.
 Palanpur State: No cordon around the camps, 13,164.

CORDONS—cont.

- Panjab: Cordons placed round village area to prevent communication of people of infected village with outsiders, and round village site to prevent visits to infected houses, 10,057.
 Panjab: Cordons and evacuation the measures natives most dislike, 10,310.
 Panjab: System of police cordons, 10,057-63.
 Poona: Cordon arrangements, 21,299-300.
 Rohri: Cordoned against plague from Sukkur, 12,923.
 Rohri: Cordoned to protect Panjab, but infection passed through the cordon, 12,046, 12,078, 12,083.
 Shclapur: Cordon arrangements, 20,229-30.

Cordons efficient :

- Bilron: Cordoning of the area successful, but the village re-infected from outside, 10,741.
 Cordon at Mahi river was sufficient to stop the spread of plague until it was relaxed, 14,193-201.
 Cordons, effective measures for preventing the spread of disease outside, 9737.
 Cordon of police has a great moral effect on the people, 10,061.
 Cutch Mandvi: Cordon of 20 men sufficient for a village in Cutch, with 900 inhabitants, 13,584-9, 13,649-53.
 Daman: Registration accurate because of cordon in, 160.
 Karachi: Few cases escaped the cordon, 18,140.
 Kotri: Only two individuals got through the cordon, 12,621, 12,633.
 Panjab: Want of cordons around the villages cause of plague in the Panjab camps, 10,758.
 Sirohi: Cordons round infected villages, plague did not spread out, 9737, 9901.
 Umra: Cordon effective in preventing spread of plague to Surat, 2051-2.

Cordons inefficient :

- Cordon of eight to the mile insufficient, 10,779.
 Cordons round infected villages should in all cases be combined with inspection, 10,637.
 Cutch Mandvi: Cordons no good in Cutch, only tried in two cases, 13,501-3.
 Daman: Notwithstanding cordon, people escaped, 16,446.
 Hubli: Cordon not efficient through slackness of police, 1534.
 Hubli: Cordon of 60 native police insufficient to keep people out of evacuated chawl, 20,140.
 Hubli: First cases attributed to default of the police and clandestine meetings with people belonging to the chawls when they were cordoned, 2407, 2436, 20,151.
 In practice quite impossible to maintain the cordon in an efficient manner, 8782, 8922.
 Mahi river cordon failed to keep out plague, 14,055.
 Molagavelli: Police guard inefficient at, 4442.
 N.W.P.: Position of Kankhal very favourable for cordon, but cordon ineffective, 9213, 9366.
 Panjab: Cordons not strictly effective, 10,528-9.
 Panjab: Effectiveness of cordon decreases in proportion to the extent of area, 10,316.
 Panjab: Facility for passing the cordon by bribing the police, 10,242.
 Panjab: Only eight men to the mile in cordons round village areas, and cordons not strictly effective, but moral effect good, 10,058-67, 10,242.
 Poona: Not the least difficulty in evading the cordon, 21,328.
 Sholapur: Cordons drawn round the Sadr Bazar and town to confine the plague a complete failure; precautionary measures frustrated by bribing the police, 20,230, 20,237-8.

CORPSE BEARERS :

- Corpse bearing is not dangerous, 19,962.
 Instance of plague among corpse bearers in Bombay, 19,036.

CORPSE BEARERS—*cont.*

- No cases of plague from corpse bearing in Poona, 21,566-9.
 People kept plague alive in camp at Surat by going into the town and acting as corpse bearers, 24,422.
See Funerals.

CORPSE INSPECTION:

Arranged under the following subheads:

- Adoption at.
 Agency by which carried out.
 Complaints made in Places where carried out.
 Efficacy of Corpse Inspection in Classification of Causes of Death.
 Efficacy of Corpse Inspection if Females exempted.
 Efficacy of Corpse Inspection in Identification of Plague.
 Efficacy of Corpse Inspection in detecting Pneumonic Plague.
 Efficiency of Corpse Inspection with reference to the Place of Inspection.
 Feelings of the Natives regarding Corpses.
 Feelings of the Natives regarding Corpse Inspection generally.
 Feelings of the Natives regarding Corpse Inspection of Females.
 Opinions regarding Corpse Inspection as a Measure.

Adoption at:

- Ahmedabad: Corpses seen after death from plague, 13,945.
 Ankleshwar: Carried out in 1898 at, by three medical officers sent from Bombay, whose duty it was to inspect the corpses, which should be disposed of only on death certificates or after corpse inspection, 14,264-7, 14,280-2, 14,295-6.
 Bangalore Civil and Military Station: Carried out in, without objection or opposition, 2709-10, 2712, 25,101-3, 25,105.
 Bangalore City and Mysore City: Carried out in, without disturbance, 25,101-3, 25,105.
 Baroda City: No corpse inspection at, between first and second outbreak, 14,592-3.
 Baroda State villages: Carried out in, but requires great tact, 14,665-6.
 Belgaum district villages, none in, 23,019.
 Bhagda, corpses seen at, 16,199-200.
 Bombay: At cemeteries, no corpse inspection in end of 1898, 1122.
 Bombay: At cemeteries, medical officers have orders not to examine bodies under any conditions, 25,654-5.
 Bombay: Bodies examined at cemeteries in suspicious cases, till this excited opposition, when examination given up, 1119-21.
 Bombay, in, no system of examination of dead in end of 1898, 1129.
 Bulsar: In absence of death certificate all bodies examined, 16,169-72.
 Calcutta: In many cases when suspicious case heard of, inspection of body allowed by people of the house, 6514.
 Calcutta: No system of corpse inspection in, 6513, 6515.
 Cutch Mandvi: Carried out at, after January 1898, except when death certificate produced, 13,435, 13,552.
 Hubli: Bodies examined by Dr. Cardoz, who was occasionally, but not regularly, employed on the duty, 2473, 3136-7, 19,840.
 Hubli: Bodies examined with post-mortem in doubtful cases, 3076-8, I. 400 (XVIII.), 20,007.
 Hyderabad, Sind: Carried out in, without objection, 18,132-3.
 Hyderabad State: Carried out in, 5928-9.
 Kaira district: No regular corpse inspection in, as most plague cases died in hospital, but corpses, male and female, examined if necessary, 14,083.
 Karachi: None at, before or at beginning of first outbreak, 12,987.
 Karachi: Carried out between the first and second epidemics, 11,183.
 Karachi: At end of 1898 modified corpse inspection carried out, being dispensed with for children under two, and in cases where death properly certificated, 11,384-90, 12,777-8, 12,790.
 Karachi: All corpses seen for which death certificate not forthcoming, 11,394.
 Karachi: Compulsory in the voluntary camps at, for every person who had not been under treatment, 11,937.

CORPSE INSPECTION—*cont.*

- Karachi: Corpse inspection not necessarily resorted to in case of Khojas, 13,259.
 Karad: Corpse inspection resorted to, 21,064.
 Kotri: All corpses of children inspected at, 12,688.
 Kotri: Carried out in, without objection, 18,132-3.
 Kotri: Was carried out at, in first epidemic, being discontinued in May 1897, but re-instituted in September, and continued throughout second epidemic, 12,554-5, 12,681-6, 12,734-5.
 Mysore: Corpses regularly inspected without disturbance, 25,101-5.
 North-Western Provinces: Both Hindus and Muhammadans examined; the latter did not resent it more than the former, 2236-8.
 North-Western Provinces: Carried out in, those who would not submit to it being treated as infected, 9191, 9197-9.
 Palanpur: Carried out in, 13,166.
 Poona City, Carried out in, 21,355-83, 21,416-50, 21,774-8.
 Poona City: Corpse of every person who dies in, inspected, 21,486.
 Poona City: Diagnosis made by, plus inquiries into history of cases, 21,422.
 Poona City: Done at the house in Poona, not at cemeteries, 19,916-8.
 Poona City: Statistics relating to, in, 21,416, 21,788-94, 21,859-64.
 Poona Cantonment: Carried out before removal of body, 21,261, 21,299.
 Porbandar: Of all Hindus and male Muhammadans carried out at, 13,730.
 Punjab: Carried out and not objected to in Banga and other villages, 10,253.
 Rohri: Carried out in, 12,023.
 Satara Town: Carried out in, without objection, 22,481-6.
 Satara district villages: Carried out in, 22,629, 22,747.
 Sholapur: Carried out at, without opposition, males and females, Muhammadans, Hindus, and even pardah nashin women, 23,879-86.
 Sirohi: Not resorted to in, 9778, 9899.
 Surat: Corpses examined at the instance of the Vigilance Committee, 15,854.
 Umroth: Bodies seen at, 14,024-5.

Agency by which carried out:

- Ankleshwar: Done in, by Hospital Assistant Cooper, 14,265-6.
 Bhagda: Corpses seen by Hospital Assistant, 16,199.
 Bhiwandi: Carried out in, by hospital assistants, 22,185-8.
 Bhiwandi: Momons at, object to corpse inspection of their women by hospital assistants without presence of Europeans, 22,189.
 Bombay: Hindus and Mussalmans willing to have corpses examined by Europeans, but not by Native doctors of another faith, 17,903.
 Bulsar: Carried out in, by hospital assistants, 16,169-171.
 Calcutta: Objection to would depend on manner in which carried out; with Brahman doctors Hindus would not object to corpse inspection of males, 6606, 6682.
 Cutch Mandvi: Done by Native doctors and hospital assistants, and certificates liable to suspicion, II., 474.
 Hubli: Done by Assistant Surgeons and Hospital Assistants, 3077.
 Kaira district: Done by Hospital Assistants, 14,083.
 Kotri: Done in, by Assistant Surgeon Macmillan and by hospital assistants, 12,700, 12,735.
 North-Western Provinces: To meet Native views, carried out by Assistant surgeons accompanied by Native medical practitioners; if they disagreed, Commissioned Medical Officer called in, 9200.
 Poona City: Arrangements for carrying out in, 21,423-442, 21,462-4.
 Rohri: Done in, by hospital assistants, 12,026.
 Satara: Carried out at, by Hospital Assistants, 22,482, 22,575.
 Satara: If done only by European doctors, could be done only at headquarters, as no staff available elsewhere, 22,102.
 Umroth: Bodies seen by Hospital Assistant, 14,024-5.

CORPSE INSPECTION—cont.

Complaints made in Places where carried out :

- Caste, objection to inspection of a Brahman in Poona City, except by Brahman doctor, 21,373.
- objection to examination in case of a fakir in Poona City; body afterwards examined by Brahman doctor, 21,373, 21,825.
- in examination sometimes caused great annoyance in Poona City, 21,549.
- two or three complaints in Poona City that laying out of body delayed, 21,569-71.
- Delay in objections have been made in Poona City on account of delay in disposing of body, 21,869-71.
- objection to, in the North-Western Provinces on ground that it delayed disposal of body, 9200.
- In Poona not objected to, except on two or three occasions, 19,920-1, 19,934.
- Sex, only one objection in Poona City to examination of female corpse, 21,375.
- one objection in Poona City regarding Muhammadan female, whose body was finally inspected, 21,825.
- only one objection in Sholapur, not serious, female doctor being asked for, 23,834.

Efficacy of Corpse Inspection in Classification of Causes of Death :

- Allows of classification only into "certainly plague," "certainly not plague" and "suspicious," 21,902-5.
- In Poona City deaths classified as plague only when bubo found; character of deaths classified as suspicious, houses in which they occurred being disinfected, 21,906-13.

Efficacy of Corpse Inspection if Females exempted :

- Useless unless bodies of women examined, 3810.
- Would give good idea of existence of plague if most males examined, 6666, 9239.

Efficacy of Corpse Inspection in Identification of Plague :

- Best means for early detection of epidemic, 9521-2.
- Disease cannot always be diagnosed after death 11,366.
- Every case of plague could be discovered by corpse inspection, by existence of buboes or oedema, 9620.
- Found useful in Poona City for the identification of plague cases when done by European doctors, 10,979-82.
- In many cases impossible to detect cases of plague by, 21,958.
- In Poona City 85 per cent. of deaths due to bubonic plague, which can be detected by corpse inspection, 21,865.
- In Poona City 106 cases of plague, mostly bubonic, discovered by corpse inspection among 3,035 corpses examined, 21,376-9, 21,444-5, 21,449, 21,477-84.
- Instances in which the inspection of corpses actually carried out at Karachi has failed to detect presence of plague, 12,780-8.
- More useful than sick visitation, only one case of plague discovered by latter in Poona City to four discovered by corpse inspection, 21,381-2.
- No example met with of subsidence of bubo in bubonic plague just before or after death, 21,443, 21,866.
- Suspicious cases; general look of body and retention of warmth assists detection by corpse inspection, 21,365-6.
- Useful but not reliable for the detection of every case of plague, 12,779.
- Useless where bubo is not pronounced, and in puerperal cases, 11,391.
- Would help in determining whether there was plague or not, 6605.
- Would not materially assist in finding plague cases in Bombay, 17,987.

Efficacy of Corpse Inspection in Detecting Pneumonic Plague :

- Pneumonic plague, after death, could not be detected by, 1135, 3808, 11,393, 14,235, 18,134, 26,744.
- Pneumonic plague can, generally speaking, be detected by medical examination and inquiry, but not certainly, 21,732-3.

CORPSE INSPECTION—cont.

- Pneumonic plague cannot be diagnosed in case of dead body with certainty without bacteriological examination, 20,017-8.
- Pneumonic plague, could be discovered by corpse inspection by existence of oedema, 9618-20.
- Pneumonic plague, could not be absolutely certain about, by corpse inspection, 19,922.
- Pneumonic plague, difficult to diagnose by, 21,465-8.
- Pneumonic plague, not much value in cases of, without post-mortem, 8612-3, 9434-5.
- Pneumonic plague, not sufficient to ascertain whether a person has died of pneumonic plague without history which is inquired into, 9240-2.
- Pneumonic plague, of doubtful use in, and would give uncertain results, but indications might be gained from dribbling saliva, 6686-8.
- Useless for discovery of plague, as pneumonic form of the disease cannot be found out by it, 26,799.

Efficiency of Corpse Inspection with reference to the Place of Inspection :

- Advantage of showing where plague has occurred, not realised if examination takes place at cemeteries, &c., 8815-6.
- Better done in house where death occurred, as, if death due to plague, information as to locality of disease obtained, 19,919.
- Bodies in some cases removed from houses in which they were living, 8317.
- No corpse could be surreptitiously buried in Poona City in beginning of 1899, 21,570-2.

Feelings of the Natives regarding Corpses :

- Against Hindu and Muhammadan religions to touch a corpse after death, 12,521.
- Corpses not to be touched after the death ceremonies performed, 26,745.
- Dead not regarded with same respect as living, no objection to body being touched, 3305-7.
- Objection to body being seen or touched, 10,987.
- People have great horror of their dead being examined after death, 13,435, 13,552.
- People often quite callous as to what is done with their sick and dead, 22,749.
- Unnecessary to bare body for corpse inspection, 3307.

Feelings of the Natives regarding Corpse Inspection generally :

- Bangalore Civil and Military Station: Muhammadans object to their houses being entered for, 2711.
- Bhiwandi: Would have been difficulty about in, for Muhammadan females, and could not have been carried out without presence of Europeans, 22,193-4.
- Bombay: Anything more than summary inspection of body would be impossible, and resented on religious grounds, 1156.
- Bombay: At the cemeteries not objected to in, 17,745.
- Bombay: Corpses sometimes examined at cemetery, till opposition caused by it led to abandonment of such examination, 1120.
- Bombay: Done in, without difficulty, but Natives would object to it in most cases, especially if done by young medical men, 17,967, 17,970.
- Bombay: Would arouse much opposition, 25,619.
- Bombay: Would have a very disturbing effect in, 17,887.
- Calcutta: Allowed by people of houses in several cases, 6514.
- Calcutta: Difficult, and would require delicate handling, 6682, 6684-5.
- Calcutta: Muhammadans would not object to, for males, if doctors good class and right sect, 6683.
- Calcutta: Some Natives rather pressed adoption of, as a measure, 6695.
- Calcutta: Would be objected to, even for males by Hindus and Muhammadans, who would yield neither to it nor to rule requiring death certificate in lieu, 7548.
- Outch Mandvi: No objection to, at all among Muhammadans or others, 27,174-6.
- Karachi: Hateful to the people, because against Hindu and Muhammadan religions to touch a corpse after death, 12,521.

CORPSE INSPECTION—cont.

Karachi: Muhammadans in first outbreak got accustomed to, but before second outbreak asked for services of lady doctor, for which they paid fees, 3803.
 Karachi: No great objection to, 3862.
 Many classes to whose feelings corpse inspection is repugnant, 11,234.
 Muhammadans have submitted to it in certain parts only because they saw the hopelessness of opposition, 26,811.
 Muhammadans would be prepared to have their female corpses examined in preference to undergoing segregation, 9440-2.
 Muhammadans would object specially, but corpse inspection is objectionable to all people, 17,886.
 Northern India: It would be dangerous to make corpse inspection compulsory in the North-Western Provinces and the Punjab, and not worth the opposition it would give rise to, 26,744, 26,801.
 North-Western Provinces, disturbances and riots at Jawalapur, due to dislike of corpse inspection and to other causes, 9192-6.
 North-Western Provinces: More difficult in Jawalapur than in Kankhal and Hardwar, 9243-4.
 North-Western Provinces: Natives prefer corpse inspection, even of women, to segregation, 9439.
 North-Western Provinces: Not liked in, but carried out without opposition if not insisted on where death properly certified, 8808-10.
 Panjab: Not objected to in villages, 10,253.
 Poona: No objection to in, where Muhammadans not strong, 10,883, 10,885.
 Poona: No objection to, 21,824.
 Poona: Not opposed in, because the Natives were utterly disheartened, 26,744, 26,775-7.
 Rajputana: Not possible among the Muhammadans in, especially in large towns, 9780.
 Satara: Natives would have no objection to examination of corpses by European doctors, 22,098.
 Satara: Hindus would not object to examination by Muhammadans and *vice versa*, 22,099-100.
 Satara: No difficulty about corpse inspection at, Muhammadans being a small and inconsiderable portion of the population, 22,481-6.
 Satara district villages: Corpse inspection offensive to the feelings of the people in, 22,629-30.
 Satara district villages: People as a rule show both male and female corpses freely, 22,748-9.
 Sholapur: No opposition, 23,879-86.
 Sind: Not liked anywhere in, 3802-6.
 Sind: No very violent opposition to in, 11,284.
 Sind: Muhammadans would probably object to examination by Hindus, 22,099-100.

Feelings of the Natives regarding Corpse Inspection of Females:

Bangalore Civil and Military Station: Female bodies examined by females, 2711, 25,104.
 Belgaum district villages: Would be offensive and impossible in case of pardah women, 23,020-4.
 Bhiwandi: Difficulty probable at, in the case of females, 22,193-4.
 Bhiwandi: Memons at, object to females being examined by Natives in absence of Europeans, 22,189.
 Bombay: Muhammadans might resent examination of females, but have not done so, 17,969.
 Calcutta: Better left alone as regards females; even by female doctors, would not be liked, 8606-7.
 Hyderabad Sind: Female corpses inspected by lady doctor, 18,134.
 Hyderabad State: Some Muhammadans object in case of females, but female bodies not examined, 5930-1.
 Karachi: Bodies of women examined, 3810.
 Karachi: Muhammadan females, bodies of, examined by ordinary doctors, and later by female doctors, 3804.
 Mysore: Women examined by women, 25,104.
 North-Western Provinces: Carried out in case of women, 9433.
 North-Western Provinces: Females examined by men, but inspection of female corpses not

CORPSE INSPECTION—cont.

insisted on to the same extent as that of males, 9202-4, 9239.
 North-Western Provinces, Hardwar and Jawalapur: Muhammadans objected to in case of females, but no great objection, 9235-8.
 Objection anticipated, especially in case of females, 25,745.
 Poona Cantonment: Done in houses in, without objection, regarding Muhammadan women or others, 21,260-2.
 Poona City: No objection particularly to inspection of female corpses, 21,372.
 Porbandar: Only during the height of the epidemic insisted on for female Muhammadans, 13,730.
 Satara: Muhammadan females have been examined by doctors, though the examination usually done by female doctors, 22,101.
 Satara district villages: Of females not offensive to feelings of people, except in pardah families, 22,748-9.
 Sholapur: Examined at, without opposition, 23,882-4.
 Sholapur: No objection to examination of groin of female bodies, 23,973-4.
 Umroth: Female bodies seen by Hospital Assistant, 14,025.
 Utterly repugnant to Muhammadans and Hindus, especially in the case of females, 26,810.

Opinions regarding Corpse Inspection as a Measure:

Bombay: By slow process corpse inspection in, at houses might be ultimately introduced, and would be advantageous, 25,620-1.
 Bombay: Corpse inspection would undoubtedly give more complete information than system of inquiry in force in Bombay, but would arouse much opposition, 25,618-9.
 Bombay: Not recommended in, where Muhammadans too strong, 10,983-5.
 Bombay: Probably not applicable to, 19,924-5.
 Bombay: Recommended in, at cemeteries, where it is probable that correct addresses of deceased would be obtained, 17,743-52.
 Cardinal measure before sanitation and preventive measures, but the difficulty is how to do it, 26,738.
 Death registration without corpse inspection would be valuable, 26,748.
 Desirable in places where considered feasible by authorities, 9438.
 Difficult to make it penal to move or dispose of corpses before examination, 26,737-8.
 Most important in large towns at the beginning of an epidemic to ascertain presence of plague; unnecessary after plague has spread, 9247.
 Most valuable agency there can be employed, combined with bacteriological examination of suspicious cases, 21,929.
 Necessary for early detection of first cases, 9430-1.
 Necessary measure, 8810, 8815.
 Necessary, but should be carried out with as little inconvenience to people as possible, 21,549-50.
 Next best measure to notification of diseases, 19,923.
 Northern India: In large towns, would require great tact, but could be arranged at beginning of epidemic with co-operation of Native leaders, who would be anxious to trace and suppress first cases; impossible after spread of plague, 9247-51.
 Not recommended, 26,745, 26,747, 26,774, 26,795-7.
 Not recommended that Health Officer should have the power of corpse inspection if, under a system of death registration, he doubted the correctness of a certificate, 26,773, 26,804-9.
 Option may be offered of submitting to or being treated as infected, 8814.
 Possible to be carried out in most communities, 9432.
 Unnecessary in Karachi, owing to efficiency of system of supervision of mortality, 11,284.
 Unnecessary, as plague cannot always be diagnosed by, after death, 11,366.

CORPSE INSPECTION—cont.

Unnecessary if mortality carefully watched, when, if suspicion aroused, it can be resorted to, 11,285.
Very valuable, 11,284.

COTTON:

See Merchandise.

COW-DUNG:

Identification of Bacillus of Plague in:

No method for identifying the microbe in cow-dung, 8537.

See Isolation of plague bacillus.

Life of Bacillus of Plague in:

In laboratory experiments the plague bacillus lived several months in sterile cow-dung, 18,877.

In unsterilised cow-dung the microbe did not live more than six days, 18,880.

See Perchloride of Mercury: *action on the bacillus of plague.*

.. Permanganate of potash.

CULTURES OF BACILLUS OF PLAGUE:

Aeration of:

Addition of ghee to assist aeration of cultures, 27.

Characteristics:

Characters of bacillus not constant in cultures, very varying, and different from characters of bacillus obtained from the blood of animals, which are constant, 26,123.

Size varies considerably in the different growths, 26,402.

Specular appearance of colonies on agar, not an important characteristic, 8667, II. 4.

Stickiness a very variable attribute in the microbe of plague, 8669.

Tangled skeins, in bouillon and gelatine the bacilli form long, 8719.

Threadly colonies produced on agar plates, 27,320.

Typical appearance of plague cultures, 3654.

Isolation of Plague Bacillus in Cultures:

Method for isolating the plague microbe in cultures, 8594.

See Isolation of bacillus of plague.

Media of Cultivation:

Agar: In cultures with salt agar involution forms will develop in 24 hours if kept in the incubator, 8717.

Albumose: Grows better in albumose than in real peptone, 17,387.

Bouillon: Characteristic growth of the microbe of bubonic plague in bouillon II. 4, 8719.

Gelatine: Characteristic growth of the microbe in, II. 4, 8719.

Peptone: Grows better in albumose than in real peptone, 17,387.

Plantain: Grows on sterilised plantain, 26,428.

Warden's broth: Bacillus of plague cultivated in Warden's broth and ghee for Haffkine's prophylactic, 27.

Post-mortem:

Method of making post-mortem cultures, 8393.

Temperature for:

Favourable cultivation temperature for bacillus of plague, 80-90 F., 99.

Plague virus grows fastest at a temperature of 37° C., 26,342.

See Bacteriological characteristics of bacillus of plague.

.. Coli Bacterium.

DAMAN:

Inoculation in, with Mr. Haffkine's Prophylactic:

Daman statistics, correctness of, 160.

Figures checked by Mr. Damaun Wala and his servants: effects of inoculation in each of three years, 25,429-41.

Increase of plague among the uninoculated at Daman, 18,701-7.

Inoculations among the Parsees, 16,787-93.

Inoculations at Daman, 25,417-26.

Inoculations done in 1897 and 1898: House inspections showed that the uninoculated

DAMAN—cont.

got plague while the inoculated escaped, 16,361-4.

Inoculations introduced in March 1897, 16,405-7.

Inoculations in Upper Daman only, 27,207.

Inoculation of all the inhabitants of the Fort, Upper Daman, including about 140 soldiers, and though rats died there was no plague among men, evacuation being resorted to in addition to inoculation, 16,448-58, 16,476.

Inoculations performed at Daman, summary of results, 52-60, 72.

Investigation sheets, manner of preparing and checking, 27,211-3, 27,284-6, 27,297, 27,301.

Method of checking plague occurrences among the inoculated; in 1897, on account of the panic and confusion, the statistics are quite unreliable, 16,744-9.

Method of collecting and checking particulars for the preparation of investigation sheets and the Joint Report on Inoculations, 16,862-77.

Method of inquiry into the figures relating to Daman, 27,189-204, 27,274-9.

Mortality rates among the inoculated and the uninoculated at Daman, 27,280-302.

No death from cause other than plague among the inoculated in Daman, 25,446.

Report on plague in Lower Daman, and effect of inoculation there, by Mr. Haffkine and Surgeon-Major Lyons, I. 305-330.

Upper Daman: In 1898 333 inoculations, with 48 cases and 18 deaths among the inoculated, 16,460-3, 16,604-5, 16,611.

Watch kept upon the inoculated, to observe effects, 25,427-8.

Statistics relating to:

Concealment of cases common, so that in April 1897 the authorities took steps to ascertain the numbers of dead by special inquiries at burial and burning places, 16,415-9.

First epidemic in 1897, February to June, Lower Daman only affected, 2,000 deaths, I. 306, 16,371-2, 16,385.

In epidemic of 1898, 1,318 attacks and 1,224 deaths, 16,511.

Lower Daman: Out of a population of 7000, 3,000 died of plague, 15,959.

Lower Daman: Population 7,000, 16,846, I. 305. Plague at first worst among Muhammadans, and spread to Machis, 16,351.

Plague spread from Machis to Banniahs, and thence to Muhammadans, 15,959.

Population, number of deaths, and extent of emigration from Daman estimated by guesswork, 27,214-42.

Sixty-eight per cent. of cases plague mortality, I. 382.

• System of death registration in force in 1897-8, 16,640-2.

Upper Daman: 1,000 deaths from plague during the second outbreak, 15,959.

Upper Daman: No plague in 1897, 16,430.

Upper Daman: Population, 5,400, 16,345, 16,464, I. 305, 16,438.

DAMP:

Bombay, Byculla Jail: Observations on the effect of moisture and dryness on plague in, 17,113.

Bombay: In 1896, a fortnight after the heavy rainfall, the shady streets were still damp, 898.

Bombay: Water supply had to be cut off from houses in Mandvi to prevent their dampness, 916.

Dryness of inhabited places the best prophylactic measure, III. 9.

Life of Bacillus of Plague in:

Flourishes most luxuriantly when the air is moist, 18,638.

Microbe establishes itself mostly in the presence of damp, dirt, and darkness, 9683.

Vitality of the germ is diminished by the sun and increased by damp, 17,031.

See Rains.

.. Sanitary conditions

.. Subsoil water.

.. Water.

DEATH CERTIFICATE.

See Registration of death.

DEER:

Died of plague at Bangalore, 3601.

DESICCATION:

Effects on Bacillus of Plague:

Bacillus found to survive five days desiccation in hydrogen, II. 8.

Bacillus somewhat resistant to desiccation, II. 13.

Bacillus desiccated in glass rods in air lived 48 hours, 18,886.

Bacillus shown by experiments to survive four days ordinary drying, 26,344-5.

Bombay, Byculla Jail: Observations on the effect of dryness and moisture on plague in, 17,113.

Desiccation with calcium chloride kills bacillus of plague in 18 hours, 26,346.

Disinfection of crews kit and clothes by exposure to sun and air, 738, 814.

Drying and ventilation the best methods of disinfecting, 33,662.

See Air and Light.

„ Sun.

„ Ventilation.

„ Hot weather.

DETECTIVES.

See Informers.

„ Spies.

DIAGNOSIS OF PLAGUE:

Difficulty of:

Bacteriological examination the only means of certifying plague cases, 20,014, 22,352.

Easy when several cases occur together, 6905.

Special points in diagnosis, I. 352.

Very difficult, 1016.

Of Plague and other Diseases:

Alcoholic poisoning: Plague mistaken for alcoholic poisoning, I. 382.

Glandular fever: Seeing patient once would not show whether plague or glandular fever, 6987.

Glandular fever: Cases in Bombay mistaken for plague, 22,351.

Malaria: Distinctive symptoms between plague and malaria, I. 381.

Relapsing fever: Doubt whether cases plague or relapsing fever, 24,184.

Relapsing fever: How to distinguish plague from malaria and relapsing fever, I. 381.

Relapsing fever: Many cases sent to plague hospitals proved to be of relapsing fever and other diseases, 25,732.

Small-pox: Epidemic of small-pox and plague which developed together in three villages of the Satara district rendered diagnosis of plague at first doubtful, 21,657.

Typhus: Difference between plague and typhus fever, I. 381.

Of Types of Plague:

Bubonic plague: Bubo not alone sufficient basis for plague diagnosis, 7530.

Bubonic plague: Difficulties of diagnosing plague during life, even when glands are enlarged, 20,027, 20,032.

Non-bubonic plague: Most men now engaged in plague work are absolutely incapable of diagnosing case of septicæmic plague, 20,135.

Non-bubonic plague: Native practitioners fail to recognise plague, especially septicæmic or pneumonic, 1633.

Non-bubonic plague: Pneumonic and septicæmic cases may easily escape detection if attention is only directed to the evidence of buboes, 13,915.

Non-bubonic plague: Position of the corpse an indication in the absence of enlarged glands, 13,556.

Pestis minor: Of mild bubonic cases, difficult, 6907.

DHERS:

Dhers, although impure people, not very subject to plague, 5478.

Plague spread by the Dhers, 15,337.

DHOBIS:

Bombay: Statistics of cases among dhobis up to December 1896, I. 392, 3.

Bombay: Statistics regarding dhobis admitted to the Arthur Road Hospital, III. 466.

Calcutta: No plague among dhobis, 7665-7.

Karachi: An outbreak, 5 cases, in a group of 70 dhobis, 11,314.

Satara: Cases among dhobis, 21,260.

DIRT:

Life of Bacillus of Plague in:

Dies in dirt, 1003.

Establishes itself mostly in dirt, 9683.

Incapable of existing in dirt, 1003-4.

Virulence of bacillus of plague increased by filth, 18,635.

Opinions that Plague a Filth Disease:

Open air and cleanliness the best preventives against plague, 17,711.

Plague bacillus establishes itself and flourishes in dirt, 9683.

Plague is a disease of filth and dirt, 7836.

Plague a filth disease, and will most likely attack persons living under insanitary conditions, 12,018.

Plague a manifestation of septicæmia by a special virus of filth disease, 25,249.

Opinions that Plague not a Filth Disease:

Filth *per se* has little influence; Byculla Jail beautifully clean, but most virulent outbreak, I. 378.

Kumaun: People very dirty; they hold that dirt is a preventive against Mahamari by closing the pores of the skin, 6159, 8832.

Plague not due to dirt, 1003.

Plague not a filth disease, 16,524.

Very dirty classes, such as Dhers and Mangs, not very liable to plague, 5478.

See Sanitary conditions.

„ Scavengers.

DISCOVERY OF BACILLUS OF PLAGUE.

See Isolation of plague bacillus.

DISCOVERY OF PLAGUE:

Early discovery of Cases, importance of:

Early detection the best means of preventing spread of disease, 9518.

Early discovery of plague cases most important, 19,479.

Early information of plague cases, &c. most important measure in dealing with plague, 12,052, 16,967-71.

Early information and proper measures prevented the disease for a long time from becoming local in Hyderabad Sind, 18,897.

Early intimation the most important factor, 17,669.

Evacuation would become unnecessary if information could be obtained early enough to limit the zone of infection, 21,711.

Evacuation unnecessary if early notification be given, 16,026.

If plague discovered early, ordinary measures stamp out the disease, 14,062.

Natives should be employed as voluntary agents for obtaining early information 26,730.

Partial evacuation sufficient if early intimation of first case obtained, 13,797.

Plague accidentally discovered at Backergunge, 7426.

Report of villages where early discovery of cases and suitable measures at once stopped the disease, 14,062.

The more perfect the organisation for obtaining early information the better results may be expected from plague measures, 21,708.

DISCOVERY OF PLAGUE—*cont.*

- See Concealment of plague cases.
 " House searches.
 " Informers.
 " Notification of plague.
 " Registration of death.
 " Spies.
 " Staff: plague.
 " Volunteer agency.
 " Ward system.

DISINFECTANTS.

- See Air and Light,
 " Boiling.
 " Burning.
 " Calcium Chloride.
 " Carbolic Acid.
 " Chlorine.
 " Chloro-Nitrous Ozone.
 " Copper Sulphate.
 " Electrolysed Water.
 " Izal.
 " Jeyes' Fluid.
 " Lime.
 " Lysol.
 " Naphthaline.
 " Nitric Acid.
 " Nitric Peroxide.
 " Oxydising Agents.
 " Perchloride of Mercury.
 " Permanganate of Potash.
 " Phenyle.
 " Reducing Agents.
 " Sulphur.
 " Sulphuric Acid.
 " Sun.

DISINFECTION:

Attitude of the People towards

- Bangalore: Great opposition to disinfection, 2719.
 Calcutta: Disinfection strongly disliked, 7520.
 Calcutta: Disinfection carried out in Cross Street with difficulty by personal influence of officers, 7521.
 Calcutta: Chemical disinfection supposed to injure the health by the residents of the Bara Bazar, and therefore resisted and hindered, 7520.
 Calcutta: Natives begin to disinfect their houses of their own accord, 7661.
 Calcutta: Objection to segregation but not to disinfection, 6545.
 Calcutta: People might be persuaded to leave bustees for disinfection for three hours if camps were provided, 7718-20.
 Cause of irritation in rural districts, 19,515.
 Dharwar: People have no belief in disinfection, but apply for it as a means to return to their houses, 23,776.
 Hubli: When disinfection of houses was gratuitous, people used to bribe the "coolies" to mark houses as disinfected without disinfecting them, 23,336, 23,399.
 Hubli: People at a late stage in the epidemic paid for disinfection of houses, and they resorted to disinfection through rivalry to see who would spend most on it, 23,454.
 Karachi: Opposition to disinfection, 11,651.
 Natives object to disinfection by chemicals, 9740, 9813.
 Native States: Great difficulties in disinfecting villages, 9739.
 Objectionable from the Indian's point of view, 16,232.
 Opinion that the system of drenching the houses whilst people were in them to a certain extent responsible for the epidemic, 16,137.
 People not yet convinced of the usefulness of disinfection of houses, 14,763.
 Surat: Chemical disinfection led to concealment of cases, 16,137.

Difficulties in carrying out Disinfection:

- Bombay: At beginning of epidemic no apparatus, no stoves, no special disinfecting staff, 1147-50.
 Bombay: Disinfection very imperfectly carried out in Bombay, 26,650.

DISINFECTION—*cont.*

- Bombay: Unsatisfactorily carried out in, owing to want of supervision, 416.
 Calcutta: Almost impossible in bustee houses, 7689-90.
 Calcutta: Disinfection almost impossible in the insanitary parts of the town, 7519.
 Calcutta: The construction of bustee houses is the great impediment to their thorough disinfection, 7709.
 Chemicals useless in mufassil towns on account of the construction of the houses, 24,316.
 Cleansing of the evacuated houses by the natives themselves a cause of renewed infection, 23,174.
 Coolies cannot be taught to do their work efficiently, 16,987, 21,095-7.
 Coolies careless: impossible to be sure of efficient disinfection of houses, 11,273, 24,342.
 Difficult in hospital through patients spitting anywhere, 7085.
 Disinfection of houses very little practicable, 23,187.
 Disinfection of houses in India useless on account of the rats, which are not affected, and keep up the infection, 8578, 11,460-2, 22,864.
 Hubli: The natives were made to pay the costs of disinfection with consequence that they took care the work was not shirked, 23,368.
 Impossible to reach every cravice in houses with disinfecting solution, 20,161.
 In native houses very difficult. So many crannies, 7856, 15,181, 24,342.
 Of surface in houses at Karachi useless on account of their structure, 11,461.
 Surat: Disinfection unsatisfactorily done 24,450.

Houses: Extent of Disinfection:

- Ankleshwar: Only those streets disinfected where plague cases had been found, 14,234.
 Baroda: Perchloride of mercury used for all houses in which any death had occurred. The others thoroughly cleaned, whitewashed, and opened for ventilation, 14,631.
 Belgaum: Disinfection of houses and burial parties the only plague measures employed, 22,807.
 Belgaum: No attempts possible to disinfect other than infected houses, 22,830.
 Bombay: Houses at first, though not later, whitewashed in advance of the probable line of plague, 1214.
 Bombay: In infected houses, only the room of the patient and the two adjoining rooms disinfected, 25,640.
 Calcutta: Only the room of the patient disinfected, 6591.
 Dharwar: Disinfection of houses in villages impossible with staff available, 2145-6.
 Disinfection should not be confined to plague-infected houses, 14,439.
 Karachi: Disinfection of all plague-infected houses, 12,789.
 Malegaon: Every house disinfected, 18,080.
 Mysore villages: No disinfection done, 3324.
 N.W.P.: Whole town at Hardwar, Kankhal, and Jawalapur systematically disinfected, 9045-8, 9090, 9115, 9175.
 Poona, Sadashiv Pet: Every house disinfected, 21,589.
 Roof ought to be disinfected as well as rest of rooms, 7857.
 Roofs should be disinfected as well as walls and floors, 20,163.
 Satara: Restricted to infected houses, 22,298.
 Sholapur: No disinfectants used in the villages round, 24,037.
 Whole of wall might well be disinfected, 5785.

Imported Cases and Disinfection:

- Disinfection without evacuation recommended for imported cases, 22,892.

Instances in which no Cases followed House Disinfection:

- Ankleshwar: No instance known of plague contracted in a twice-disinfected house, 14,416.

DISINFECTION—*cont.*

- Bombay: In Koli Wadi and a chawl in Parel disinfection effective, 20,431-7.
 Bombay: Not a single case among contacts after thorough disinfection of room where patient had died, 25,803.
 Bulsar: Re-occupation of houses 10 days after disinfection not followed by plague, 19,957.
 Calcutta: Disinfection inefficient, notwithstanding no cases recur, 5615, 7662, 7664.
 Calcutta: From the time when disinfection became efficient plague began to abate, II., 534.
 Calcutta: No case known of plague re-appearing in disinfected house, 7294, II. 534.
 Guntakal Junction: Stops plague, 4183.
 Kankhal: Good results of disinfection of every room and of every house, 9045-51.
 Panjab: No instance known of recurrence of plague in a house known to be infected after its disinfection, 10,047.
 Poona: Value of disinfection exemplified in the case of Wannari Bazaar, and by fact that cases occurred on re-entering houses only lime-washed, but not those chemically disinfected, 10,970, 10,972.

Instances in which House Disinfection did not stop Plague:

- Belgaum: Disinfection did not stop plague in, 22,867.
 Hardwar: Alone not sufficient to stop progress of plague, 9035.
 Houses are still dangerous, even if disinfected, for re-occupation after only one or two weeks, 20,158.
 Igatpuri: Complete disinfection does not stop the spread of plague, 19,455-67, 23,317, 29,196.
 Jawalapur: Insufficient to stop course of disease at, 9175.
 Lanauli: Disinfection not effective in, 20,184, 20,197.

*See Recurrence.**Opinions regarding Value of Disinfection:*

- Bacillus dies in time without disinfection in about four months, 22,663.
 Bacillus dies out without disinfection in two months, 22,713.
 Bacillus of plague not killed by disinfectants, but by lapse of time, 11,531.
 Bacillus survives application of disinfectants to infected floors, 5159.
 Chemicals are very costly and do not give absolute results, 22,546.
 Chemical disinfection not worth the money spent on it, 11,273, 24,448.
 Chemical disinfection no use for Indian houses, burning the only cure, 15,178.
 Chemical disinfection proved by experience to be unnecessary, ventilation and evacuation sufficient, 24,036-40.
 Chemicals have not produced results to warrant the cost, 19,515.
 Chemicals not to be relied on at all, 22,327.
 Chemical disinfection: The fact that the plague germ can be killed by experiments in laboratories does not guarantee its destruction under natural conditions, 22,325.
 Comparison between the number of bacteria found in a house before and after its disinfection no test as to its value, 26,369.
 Comparison of the growth of colonies obtained from wall scrapings before and after disinfection showed no great difference, 26,350.
 Details of experiments to determine the efficacy of the methods used for plague-infected houses, III. 345.
 Disinfection by chemicals only useful in so far as the houses are cleaned out and aired in the process, 22,864.
 Disinfection of clothing useful, but of houses impracticable, 23,187-8.
 Disinfection of house by chemicals inefficient 20,158-61.
 Disinfection by various fluids does more harm than good, 24,935.
 Disinfection without evacuation sufficient for imported cases, 22,82-96.

DISINFECTION—*cont.*

- Disinfection unnecessary if houses vacated for three months and ventilated, 24,040.
 Evacuation and opening up of houses for a month more effective than chemical disinfection, 24,449.
 Evacuated houses left unoccupied for two or three months proved safe without chemical disinfection, 19,955.
 Even when most carefully done not always adequate to destroy the infection, 16,236.
 If a thoroughly satisfactory measure, it ought to destroy the germ at once, 23,191.
 No use when badly done, 18,768.
 Not complete if any micro-organisms can be discovered after, 5188.
 Of houses in towns not worth the enormous expense it entails, 11,266.
 One process not sufficient, 10,325.
 Repellant, not a destructive agent, 22,162.
 Scientific disinfection of large areas an impossible measure, 12,757.
 Sun does the work much better than chemicals, 24,342.
 Thorough disinfection of every house in the place necessary measure in cases of plague, 9436.
 To be effective must be lasting, II. 13.
 Valuable if quite efficient, but difficult to get it properly done, 7991-4.
 Ventilation as effective as disinfection by chemicals, only slower, 22,059.
 Very little use if done several days after the infection has had a start, 25,130.

Opinions regarding Disinfection combined with other Measures:

- Evacuation, combined with disinfection, ought to take the first place in plague measures, 18,422, 19,952.
 Evacuation must be combined with the disinfection of the infected area and persons, 10,363.
 Evacuation, cleansing, and disinfection the most important measures in dealing with plague, 16,969-71, 16,987.
 Evacuation, segregation, and disinfection valuable in the order named, 23,032.
 Failure when not combined with segregation, 18,426-8.
 Useless without evacuation, 14,441, 19,484.

Rules for and matters connected with the carrying out of Disinfection:

- Bangalore: Directions for disinfection of houses in, 2707.
 Bombay Presidency: General procedure in, 8, 9.
 Compensation paid at Hardwar for destruction of property, 9312.
 Government compensation in the N.W. Provinces for loss by disinfection, 8841.
 Houses should be opened up before use of chemical disinfectants, 24,124.
 More efficient if done by fire engines, 8269.
 More penetration when steam or strong hand pumps are used, 915.
 Mysore: Rules for, in the Mysore State, 25,099.
 Panjab: Rules for the disinfection of houses, 9984, 9996, 10,014-42.
 Panjab: General mode of disinfection in the villages of the, 10,475-9.
 Poona: Method of house disinfection, 21,289.
 Steam engines used to flush down houses, 945.
 Ten days interval before disinfecting houses, because dangerous before, 5529.
 The rule to allow an interval of 10 days between evacuation and disinfection of no practical value, 10,044, 10,566, 10,788.
 To give time for epidemic among rats to cease, disinfection not begun till 10 days after evacuation, 10,473.

See Burning.

- „ Camp, length of period of vacation of houses.
 „ Clothes.
 „ Floors.
 „ Grain.
 „ Kiln burning.
 „ Lime.

DISINFECTION—cont.

- See Perchloride of mercury.
 " Period for which plague bacillus can survive.
 " Persons.
 " Phenyle.
 " Recurrence of plague in the same house or locality.
 " Unroofing.
 " Untiling.
 " Ventilation.
 " Walls.

DISINFECTORS :

Plague Cases among :

- Ahmadnagar: Coolies employed in unroofing contract plague, 24,210.
 Ankleshwar: No cases from whitewashing houses disinfected with perchloride of mercury, 14,237.
 Cases among disinfecting gangs, 7220.
 Cutch Mandri: Attacks among disinfectors, 13,480.
 Hyderabad State: Sweepers employed in cleaning infected houses frequently attacked, 1,442.
 Jamalpur: 3 of the 34 cases were in disinfectors, 9158.
 Jawalapur: 29 cases connected with disinfectors, 8929, 9178, 9217.
 Kankhal: 4 of the 38 cases were in disinfectors, 9221.
 Karachi: Cases common among disinfectors before their inoculation, 11,769, 22,668.
 Kotri: 5 out of 100 cases in disinfectors, 12,647.
 Palanpur: Disinfecting parties attacked, 13,100.
 Panjab: Cases among disinfectors, 10,603-25, 10,625.
 Panjab: Disinfectors attacked in every village before inoculation applied to them, 10,681-6.
 Panjab: Disinfectors did not suffer from pneumonic plague to any marked degree, 10,340.
 Panjab: 50 cases among disinfectors (total cases 3407, 9981), 10,001.
 Panjab: Lime washers attacked, 10,323.
 Panjab: List of some cases among disinfectors, 10,384.
 Panjab: Mahigahla—7 disinfectors attacked, 10,139, 10,349, 41.
 Panjab: Precautions taken with disinfections, 10,003-14.
 Panjab villages: Disinfectors attacked, 10,143, 10,145, 10,146, 10,468.
 Poona: No attacks in disinfecting gangs, 21,414.
 Rohri: No plague among disinfectors, 12,089.
 Satara: Attacks of disinfecting coolies, 22,720-7.
 Sukkur: A large number infected by a plague case in a temple, in which five disinfecting coolies also died, 18,403.
 Surat: A carpenter washing on disinfection with a wound on his foot attacked, 16,007.
 Thana: Two men sent to clean a house where dead rats had been found got plague and died, 220.
 Umreth: Two plague cases among Golas sent from segregation camp to limewash their houses, 14,067.

Risks run by Disinfectors, and Precautions against :

- Boots and clean hands prevented disinfecting staff from taking infection, 16,007.
 Digging up floors: Danger minimised by first white washing, 5554.
 Disinfection dangerous work, many disinfectors attacked, 10,000.
 Disinfection not dangerous to the gangs with proper precautions, 10,790-1.
 Good results of inoculation among coolies on disinfecting gangs, 10,006-8, 10,681-6, 10,690-4, 11,769, 22,686.
 No cases of mercurial poisoning among disinfectors, 10,020, 13,632, 19,939.
 Panjab: Precautionary rules for the workers on disinfecting gangs, 10,003.
 When careless of precautions disinfecting gangs as liable to plague as other persons, 22,721.

DISINFECTORS—cont.

Supervision and efficiency of Staff :

- Bombay: At beginning of epidemic no special disinfecting staff, 1147-50.
 Bombay: Staff trained to disinfection work, 1680.
 Coolies shirk disinfecting work and require strict supervision, 7862, 21,096, 24,450, II. 13.
 Disinfection requires continuous supervision, 8055, 23,189.
 Disinfectors in villages open to bribes and careless about matters they consider unimportant, 21,154, 21,174.
 Hubli: Disinfectors found to be taking bribes to shirk their work, 23,366, 23,399.
 Just as well in hands of instructed laymen as of doctors, and no waste of power, 7970-3.
 Native agency inefficient, 7862.
 No staff to carry it out in villages, 2145.
 Ought not to be left to inexperienced hands, 15,229.
 Panjab: The Commissioner of the division issues the rules for the disinfection of infected areas, 10,661.
 Poona: Disinfection always done under European supervision, 21,397-8.
 Requires a great deal of supervision, 17,656.
 Requires European supervision, 21,097.
 Requires trained staff, 1680.
 Should be entrusted only to trained hands 14,438.
 Staff Corps officers supervise disinfection, 7971-6.
 See Flying Columns.

DOG :

- Dog died of plague in Daman, I. 378.
 Dog seen with plague in Daman by Mr. da Cunha, and several heard of, 16,546.
 Dog taken ill in Calcutta after taking up dead rat, 7187, I. 474.

DOMES :

- Domes are natives of a certain caste who do not object to touch dead bodies, 6988.
 Domes: Calcutta; get clothes of dead and assist at cremations, but had no plague, 7666.
 Domes infected when assisting at post mortems, 6923-5, 6988-95, 6462, 6493, 6503-6, 6921.

DORMANCY OF PLAGUE.

- See Interval between introduction of plague and outbreak.
 " Recurrence of plague in infected towns and villages.
 " Recurrence of plague in the same house or locality.

DRAINAGE :

- Ahmedabad: Scheme for the drainage in course of execution at, 13,961.
 Bombay: Mandvi, drains are bad, 17,934.
 Bombay: More than a quarter of the island without drains, 25,741.
 Bombay: Shone system of drainage introduced in certain districts, 25,752.
 List of places where drainage and waterworks have been completed, I. 277-8.

Plague and Drainage :

- Ahmednagar: Plague broke out in the most unhealthy part of the town, where there was no drainage system, 22,264.
 Bombay: Sewer pollution not the cause of plague, 19,437.
 Karachi: Drainage system not responsible for the severity of the outbreak, 22,651.

DURATION OF PROTECTION AFFORDED BY INOCULATION.

- See Inoculation with Haffkine's plague prophylactic.

DURATION OF SICKNESS IN PLAGUE :

- Average duration of fatal cases three to four days, 2361.
 Duration of disease averaged 5½ days in 17 fatal cases, I. 381.

DURATION OF SICKNESS IN PLAGUE—cont.

- Instance of plague case of only 14 hours' duration, 17,580.
- Minimum duration of plague case under 18 hours, 9607.
- Mortality very high during first five days; highest on the second day of attack, 10,207.
- Non-fatal cases, 10 to 15 days, 2362.
- Table of mortality from day to day of the disease in the Jullundur district, II. 96.

DUST.

See Soil.

EARTH.

See Soil.

EFFECTS OF INOCULATION WITH HAFKINE'S FLUID.

See Inoculation with Haffkine's prophylactic fluid.

EFFECT OF PLAGUE ON OTHER DISEASES:

- Decrease in malarial fever during plague, 12,993, 16,505-7.

ELECTROLYSED WATER:

- Plague bacillus killed by freshly electrolysed water, with chlorinac in solution, 3632.

EMIGRANTS:

- All emigrants at Mombassa were detained at Kiamari, 11,989-92.
- No emigrants under contract allowed to depart from Karachi at all, 12,233.

ESTABLISHMENT.

See Staff, Plague.

EURASIANS, CASES AMONG:

- Bombay: Death-rate from plague among Eurasians 43 per cent; among Europeans 32 per cent., I. 382.
- Calcutta: Small percentage of Eurasians die at, 6870.
- Death-rate among Eurasians at St. George's Hospital, Bombay, I. 391.
- Poona: Sassoon Hospital, six deaths among 16 Eurasians in, 12,931.

EUROPEANS, CASES AMONG:

- Bombay: Death-rate from plague among Europeans 32 per cent. of cases; among Eurasians, 43 per cent., I. 382.
- Bangalore: Case of a European, 2600.
- Bangalore: West Riding Regiment, cases among the men of, I. 173-4.
- Course of disease the same among Europeans and natives, but the former showed more resisting power, 12,935.
- Death-rate among Europeans and Eurasians at St. George's Hospital, Bombay, I. 391.
- Few cases among Europeans, 330, 332.
- Immunity: Almost entire for Europeans, 17,685.
- Immunity: Europeans not so immune in former times as now, 22,263.
- Immunity: Europeans have no racial immunity, 296.
- Immunity: Europeans probably have racial immunity, 6969.
- Immunity: Europeans on Malabar Hill escaped, whilst their servants contracted the disease, 1447, 18,189-99, 20,478, 20,539.
- Immunity: Fresh air accounts for immunity of Europeans, 22,426.
- Immunity: Healthy Europeans relatively immune because they sleep in beds and wear boots, 19,447.
- Immunity: Ventilation accounts for immunity of Europeans, 917, 7168.
- Notes of cases among Europeans, 7220.
- Panjab: Sanitary inspector, death from plague of European, at Mahlgubla, 10,348.
- Poona: One death among 17 Europeans in Sassoon Hospital, 12,928.
- Poona cantonment: Cases among European soldiers, 21,293.
- Three cases among, 7569-77.
- Yorsin's serum ineffective in plague case of a European girl, 1468.

EVACUATION:

Arranged under the following subheads:

- Attitude of the People towards Evacuation.
- Beneficial results of Evacuation: Instances and opinions in favour of.
- Compulsion and Evacuation.
- Difficulties connected with Evacuation.
- Early Evacuation: Opinions and Instances connected with the Advantages of.
- Length of Period of Evacuation.
- Limit of Population which can be Evicted.
- Limit of Population, 5,000-20,000.
- Limit of Population, 20,000 and upwards.
- Limit of Population, no limit.
- Partial Evacuation: Instances and Opinions regarding.
- Seasons favourable for Evacuation.
- The Rains and their Effect on Evacuation.
- Time taken to effect Evacuation.
- Total Evacuation: Opinions and Instances regarding.
- Unnecessary or Unsuccessful: Opinions and Instances that Evacuation is.

Attitude of the People towards Evacuation:

- Agriculturists go out into evacuation camps without difficulty, 22,986.
- Bandra: Impossible owing to the opposition of the Muhammadans, 18,929.
- Bangalore: Evicted people will not go into camp and overcrowd other districts, 2580.
- Baroda: The majority of the population are now convinced that evacuation is a beneficial measure, 14,635, 15,115-6.
- Bhiwandi: People refused to comply with the orders for evacuation, 14,522.
- Bombay: Parsees go readily to camp, 8294.
- Bombay: The trouble of removing real cause of the objections to camps in, 18,261.
- Co-operation of the people in reporting cases in camp necessary, 14,421.
- Dharwar: Majority of people left town for camp of their own accord, 1612.
- Dharwar: The most remarkable results from using no force but working with the people, 26,543.
- Ghoti: The residents who last year forcibly resisted evacuation, are now thoroughly convinced of its efficacy, and went out and stayed out themselves in the rains, 14,753.
- Guntakal: Takes time because of Muhammadan objections, 4145, 4161.
- Hyderabad State: Villages around go out of their own accord, 5455.
- In districts that have had experience of plague, people evacuate villages of their own accord, 9.
- Kankhal: People settled down very easily and quietly to their temporary life in camp, 9343.
- Kankhal: No opposition offered to evacuation, 9096, 9109.
- Karachi: People as a rule do not like to go into segregation camps, 11,635.
- Mahamari: People vacate villages of their own accord on appearance of, and will probably act similarly when they get to know plague, 26,575.
- Muhammadan population makes evacuation impossible, 5462.
- Muhammadans have an almost insuperable objection to, 3414.
- Mysore State: Villagers evacuate their houses of their own accord on the appearance of plague, 3303.
- Mysore State: Villagers evacuated villages willingly, 3304-5.
- Natives themselves convinced of its advantages and will take initiative, 9, 11,378, 15,116, 15,494.
- Native gentlemen use their influence and secure evacuation, 1345.
- Panjab: Cordons and evacuation the measures natives most dislike, 10,310.
- Panjab: Palwal: Evacuated under most favourable conditions through influence of the principal inhabitants, 10,725, 10,728.
- People mostly object to go to segregation camps because of the trouble of removal, 18,261.

EVACUATION—*cont.*

- Property: People object to go to camp from fear regarding safety of property left in their houses, 3321, 4970, 5007.
- Ryots go out quite readily, but traders mostly object, 22,002.
- Satara: Great difference in the attitude of the people between first and second epidemic, 22,558.
- Satara: Opposition to evacuation mostly from Brahmans, Banniahs, and Sahukars, 22,623.
- Satara: People frequently evacuate their villages of their own accord, 22,089.
- Segregation camps popular with the people, 12,522.
- Sholapur: Caused discomforts, but no complaints, 20,265.
- Shopkeepers and weavers have to be frightened out, 5456.
- Sind: Two villages voluntarily evacuated, 12,086.
- Surat: People object chiefly to evacuation and segregation, 15,865.
- Tham district: No opposition to evacuation, segregation very unpopular, 13,788.
- Umreth: Only slight opposition offered by the people to the orders of evacuation, 14,040.
- Villagers recognise usefulness of evacuation, 22,635.
- Villagers now thoroughly convinced that evacuation is a beneficial measure, 14,635.

Beneficial results of Evacuation: Instances and opinions in favour of:

- Ahmednagar: Sanitary improvements carried out in cantonment while people were in camp, 24,191.
- Ankleshwar: Plague practically stopped within a month after evacuation, notwithstanding the rainy season, 14,403.
- Ankleshwar: Table showing results of partial and total evacuation, II. 244.
- Ankleshwar Taluka: Particulars of cases before and after complete evacuation, II. 250.
- Banga: Statistics relating to evacuation, II. 97a.
- Banga: Table showing the effect of evacuation in, II. 112.
- Banga town: Table showing the effect of placing people in camp at, II. 99.
- Bangalore: Of complete streets very successful, 3396, 3399, 3440.
- Bangalore: Effect of regimental evacuation, 3396, 4489.
- Baroda: Evacuation stopped plague in villages which were reoccupied without recrudescence, except Savali, 14,630, 14,658.
- Belgaum: Good effects of removal to health camps noted in the case of a particular family, 23,041.
- Beneficial effects of camp life under supervision, 16,016.
- Beneficial in forcing the people to live in the fresh air, 19,498.
- Bholana: Two families left in got plague; no cases in camp except from contact or visits to village, 24,545, 24,561.
- Bobleshwar: No plague in people who went to camp; one family that remained in got plague, 19,513.
- Chipagiri: One hundred and fifty go out from infected area. No cases in camp; two persons who refuse to go out die of plague, 4967-70.
- Conclusions from the results of evacuation, 20,238.
- Cutch State: Table showing results of evacuation in the villages, II. 409-10.
- Cutch State: People who left villages got no plague, but the Jadejas who remained in contracted it, 13,449-50.
- Dharwar district: Good effects of evacuation well marked in the villages, 1699, 23,168, 26,543-4.
- Dharwar: Statement of plague during evacuation and subsequent to it, III. 355.
- Dharwar district: Table of results of evacuation in, III. 214.
- Disinfection should be supplemented by evacuation, 14,441-19,484.
- Effect of health camping at Poona was magical, 21,320-1.
- Effects immediate; no measure so effective, 20,441.
- Evacuation and opening up of houses for a month more effective than chemical disinfection, 24,449, 24,456.
- Evacuation brings down mortality at once, 23,202.
- Evacuation, combined with thorough disinfection, ought to take the first place in plague measures, 10,361-3, 18,422, 19,952.
- Evacuation completely successful, chief measure in Bombay Presidency, 5. 9.
- Evacuation essential, 13,191, 16,967-71.
- Evacuation excellent in small places, but impossible in large cities, 7854, 18,585.
- Evacuation first and most important measure, 22,288-9.
- Evacuation frequently stopped plague in a week, 15,124.
- Evacuation lessens mortality and decreases the duration of the epidemic, 26,543.
- Evacuation stops the epidemic in the hot weather in some villages, 9988.
- Evacuation stops the epidemic from extending, 10,464, 10,757, 25,186.
- Evacuation successful in Gulamshah village, where plague and small-pox at the same time in the Gulamshah camp, 11,138.
- Evacuation the best measure for combating plague, 11,849-50, 13,452, 14,396, 15,221, 15,764, 19,684, 22,031, 22,532, 22,595, 22,891, 23,507, 24,312-3, 26,672.
- Evacuation the most effective remedy, as plague seems to be principally a disease of locality, 8791, 17,666, 26,672.
- Evacuation the real remedy, 1061, 10,634, 11,248-51, 11,432, 15,115.
- Evacuation, segregation, and disinfection valuable in the order named, 19,639-41, 23,032.
- Evacuation with opening up and cleaning houses the best remedy, 24,363.
- Excellent measure, if combined with segregation, 11,482, 12,051, 21,667.
- Followers of 4th Hussars moved with entire success, 2839.
- General course of disease after evacuation, 9986.
- Gharibabad part of Sukkur: Most successful (1,000 inhabitants) in, 3725-37, 3813-6, 4275, 11,162-70, 18,405-8.
- Health of the people from camp life, beneficial effects on the general, 15,169.
- Health, segregation camps exert a most beneficial influence on the general, 21,719.
- Hinganghat: Very successful, 6032-6.
- Hoshiarpur district: Table showing effect of evacuation on the epidemic, II. 82.
- Immediate benefit following, 2.
- Instances of beneficial results of, 13,449-51, 22,737.
- Inoculation, combined with complete evacuation, the ideal plague measures, 22,408.
- Jalgaon, mill hands all put out at once at, with the result that not one case occurred among them, 24,563.
- Jullundur district: Table showing effect of evacuation on the outbreak, II. 80, 81.
- Jullundur and Hoshiarpur districts: Table showing period between the date of the total evacuation of the villages and the date of the last case of plague, II. 83.
- Kaira district: Statistics relating to evacuation in villages, II. 424-40.
- Kaladgi: Complete evacuation caused the plague to subside within two weeks, 19,475.
- Kalankot: Successful, 4273.
- Kalankot: Good results, 11,144.
- Kankhal: People who were allowed to remain in evacuated quarters got plague, while those evicted benefited, 9217.
- Karachi: Good results of camps in healthy spots with efficient supervision, 11,314.
- Karachi: Good effects of evacuation, 11,959-60, 12,755.
- Khandraoni: Evacuation successful at, 9661-4.
- Khari: Successful results, 18,936.
- Kotri: Table showing the beneficial result of evacuation, 12,654.

EVACUATION—*cont.*

EVACUATION—*cont.*

Mysore: Barr Sepoys attacked and marched out into camps; disease stops at once, 3,397.
 No fair test to compare the number of cases before and after evacuation, 9992.
 North-West Provinces: Good results of evacuation, 9225.
 Palanpur: Results obtained very strongly in favour of entire evacuation, 13,160.
 Panjab: Statement showing effect of evacuation in the villages, II. 80-3, 112, 117, 403.
 Panjab: Table to show effect of evacuation of villages on the epidemic of plague, II. 83, II. 117.
 Plague always went down after evacuation, 3306, 5926, 6036, 14,662, 18,582, 19,482, 22,046, 24,549.
 Porbandar: Table showing effect of evacuation on the different communities, II. 222.
 Quick and certain method of stamping out plague, 10,361.
 Removal from the vitiated air the most beneficial result of, 23,035.
 Second outbreak after disinfection easily checked by evacuation of the re-infected houses, 10,053.
 Sholapur: Effects of evacuation at, 20,233, 23,928-33.
 Sirohi State: Success of evacuation in villages, 9825-9, 9830-3, 9862-6, 9873-7.
 Stopping the plague, hygienic conditions of camp life and release from dread of plague, powerful agents to, 11,894.
 Success depends on efficiency of staff, 10,297.
 The more complete the evacuation the sooner the spread of the disease is stopped, 22,032.
 Though evacuation of a place may do harm, by causing refugees to carry plague to neighbouring places, less harm will be done by resorting to evacuation than by not resorting to it, 23,336, 26,546-7.
 Total evacuation the most effective plague measure, 11,248, 15,220, 15,764, 18,032, 19,684, 20,441.
 Total evacuation with disinfection most satisfactory, 18,421-2.
 Unkal: Successful, 2194.
 Utmost importance to evacuate thickly populated infected area, 4292.
 Wagdari: Effect on death-rate, 5926.

Compulsion and Evacuation:

Bandra: Evacuated by force, 18,570-3.
 Bangalore: Refusal to enter Government camps at, 2551.
 Broach: Compulsory evacuation of infected houses, 15,489.
 Dharwar: Difficult to get people to camp provided by Government, 1934.
 Municipal and Government camps, objection to, 12,527.
 Official interference objected to much more than evacuation, 16,137.
 Sholapur: All compulsory camps at, 20,241.
 Surat: People at, refused to go to Government camps, but made camps of their own, 15,914.
 Total evacuation should not be persisted in where people object, 26,546.
 Wholesale compulsory evacuation of infected areas a most useful measure, 11,849.

Difficulties connected with Evacuation:

Arrangements in Broach to carry on the mills while people in camp, 15,484.
 Bombay: Little done in the way of evacuation during the first epidemic owing to the difficulty of providing temporary accommodation, III. 362.
 Bombay: Necessity for camps built near centres of work, with free passes given on railway to workmen living in the camps, 8273.
 Easy at Cutch Mandvi, 466.
 Fires occurred in the private camp at Jawalapur, by which much property was destroyed, 9343.
 Found possible in Julgaon to carry on the business of the town with the people in camp, 24,563-4.
 Houses evacuated sometimes burned, 23,675-7.
 Inconveniences of evacuation greater among the better classes than the poor, 14,457.

EVACUATION—*cont.*

In voluntary camps at Karachi thefts frequent, 11,883.
 Property left in evacuated houses sometimes stolen, 5455, 22,639.
 Rohri: Done in sections in order to keep trade going, 12,039.
 Rohri: Plague continued a month after evacuation, as the people remained with their sick concealed in the date plantations, 12,107-19.
 Trades and several occupations of the people a great factor in the difficulties of evacuation, 10,296.
 Trade in large towns paralysed by evacuation, 13,1956.
 Zauana chief difficulty in evacuation, 5463.

Early Evacuation: Opinions and Instances connected with the Advantages of:

Alibag: History of plague at, most instructive in showing the advantage of early evacuation, 17,611, 17,614.
 Co-operation of the people and efficient assistance of subordinates indispensable for the good results of early evacuation, 14,421.
 Cutch Mandvi: Good results in most villages turned out early, 13,452.
 Evacuation by instalments not so definitely beneficial as prompt evacuation, 23,202.
 Gives good results if effected in time and combined with early information, 26,675.
 Instances of the benefits of immediate evacuation, 22,737.
 Instances in which the spread of the disease was arrested by early evacuation, 14,419, 18,582-4, 21,639.
 Kaladgi: Excellent results of prompt evacuation, 23,635.
 Most effective when immediately applied, 18,764.
 Must be complete, and undertaken at the first stage of the epidemic, 24,312-4.
 Partial evacuation failed in many cases because not early enough, 19,658, 23,538-43.
 Promptness of evacuation most important, 9281-3, 10,616, 21,667, 22,599, 22,737, 23,169, 23,589, 24,199, 24,545.
 Upper Daman: Early evacuation stops the disease, 16,466.
 Wasind: Evacuation before the first indigenous case stopped the disease at once, 19,654.

Length of Period of Evacuation:

Time of absence has to depend on circumstances, 575.
 At Poona, street by street inhabitants back after disinfection within a week, and had no further plague, 15, 10,928-37.
 Period 10 days, sometimes a month or more, 8301.
 At the commencement of outbreak in Rohri, infected houses evacuated for 10 days, and all their inhabitants segregated, 12,027, 12,033.
 Plague cases re-appear in disinfected houses if only left vacant for 10 days, 25,198.
 People might be allowed to return to their houses 10 days after efficient disinfection, 10,378.
 Bombay: People allowed to return after 10 days, 10,957.
 Poona: People allowed to return after 10 days, 10,929.
 Sweepers' quarter at Belgaum evacuated and re-occupied in 10 days, when more cases, and residents were then cleared out indefinitely, 2090-7.
 Infection not stopped in 10 days, if return to infected areas is allowed, 11,902.
 If incubation period is accurately known, three weeks a sufficient time for keeping people out of their villages, 10,789.
 Three weeks the minimum period of evacuation in the Panjab, 10,570.
 Period of evacuation ought not to be less than three weeks after last cases of plague, 10,054, 10,266-70.
 Palanpur: People kept out three or four weeks, 13,134.
 Time requisite, with disinfection of houses, at least three weeks, 10

EVACUATION--cont.

Evacuation and opening up of houses for a month more effective than chemical disinfection, 24,443, 24,455.
 People should be allowed to return one month after deaths stop in camp, 5451.
 People kept out for one month in Dharwar villages, 2141, 23,748.
 Maintained at Sukkur for one month, 3727.
 Period of one month after disinfection at Hubli, 1563.
 Villages should be evacuated at least a month; the longer the better, 13,456.
 Re-occupation within six weeks after evacuation and disinfection unsafe, 16,247, 20,158.
 Baroda: people kept out between six weeks and two months, 14,687.
 Two months evacuation quite sufficient, 11,380, 11,493, 12,763, 12,791, 22,714.
 Villagers kept out for two months in Hyderabad, 5926.
 Evacuation without disinfection of houses should last two or three months, 10.
 Houses left unoccupied for two or three months proved safe without chemical disinfection, 11,379-80, 19,955.
 People of Kotri kept out 2½ months, 3759.
 Should extend to three months after the last case, 22,841.
 Sholapur kept empty from December to March, 23,916.
 Return to houses safe if they have been vacated three months and ventilated, 24,040.
 Three months the longest period in which people were kept in camp in the Ankleshwar Taluka, 14,422.
 Kankhal: people out from end of October to middle of February, 9102, 9117.
 Houses should remain evacuated for about four months, 22,533.
 Karachi: Evacuation into voluntary camps began in April. People had all gone back to town by the end of August, 11,876.
 Bangalore: people allowed back only when house considered free of infection, 2580-2.

Limit of Population which can be Evicted :

Complete evacuation impossible for very large places, 8798.
 Evacuation in large towns is really a matter of finance, 21,803.
 Impossible in a big city; only leads to concealment of cases, and frightens people away, 7854, 8272.
 Much easier carried out in agricultural villages, where the people are tied to the spot by their occupations, 24,072.
 Of large numbers comparatively easy when the infected place is surrounded by open country, 18,586.
 Total evacuation impossible in Bombay, 18,588.

Limit of Population, 5,000-20,000 :

Banga and Garhshankar, 5,000 inhabitants each, evacuated, 9980.
 Complete evacuation of Kotri (6,000 people), 3752.
 Impossible to control 18,000 persons out in the fields, 24,556.
 Impossible to control village of 4,500 with the staff available, 24,065-70.
 Malegaon, about 12,000 people in health camp at, 18,074.
 Possible in most towns of 10,000 inhabitants, 10,206, 18,787.
 Rahon, population 8,000 to 10,000, evacuated, 10,459.
 Six thousand or 7,000 successfully evacuated at Kowloor, 5453.
 Total evacuation of Malegaon, with a population of 18,000, in about a fortnight, 13,777.

Limit of Population, 20,000 AND UPWARDS :

Can be applied to a town of 60,000 inhabitants, but impossible in large towns like Bombay and Surat, 11-12.
 Could be done easily up to 100,000, 26,546.
 Cutch Mandvi: between 30,000 and 35,000 evicted in second epidemic, 13,424.

EVACUATION--cont.

Evacuation of Karachi on second epidemic population, 40,000, 3773.
 Impossible in large cities, 7854.
 Karachi: about 30,000 in camp at one time 11,318-20.
 Maximum population evacuated 70,000, 5460.
 Surat, about 35,000 at one time in the municipal and health camp in, 24,420.
 Surat: Thirty-four thousand persons evacuated at one time, 15,766.
 Town of 70,000 Hindu inhabitants easily evacuated, impossible if the population is Muhammadan, 5462.

Limit of Population, NO LIMIT :

No limit to, if done in sections, as far as population is concerned, if accommodation can be provided, 26,689.
 Under favourable local conditions no limit to but that of expense, 18,586, 19,784.

Partial Evacuation: Instances and Opinions regarding :

Ahmedabad: Evacuation of the infected locality and disinfection proved sufficient, 13,937.
 Ahmedabad: The dryness of the atmosphere probable cause of partial evacuation proving there more successful than at other places, 13,937.
 Ahmednagar: Partial evacuation resorted to unsuccessfully, and town at last totally evacuated, 24,234, 24,253-5.
 Bangalore: About 75 per cent. of population evacuate their houses themselves, 3481.
 Bangalore City: Evacuation at first confined to infected houses, 3232.
 Bangalore: Complete street evacuated and very successful, 3396, 3399, 3440.
 Baroda City: Partial evacuation having failed, whole town was evacuated by March 1898, 14,613-4.
 Baroda: Inoculated persons not forced to evacuate their houses in the villages of the Baroda district, 15,084.
 Bombay City: Evacuation not attempted on a large scale, 11-13, 1345.
 Bombay: Evacuation among the Parsees in the Fort restricted to houses in which plague cases occurred, or dead rats were found, 25,247.
 Bronch: Partial evacuation resorted to, 15,486-91.
 Calcutta: Houses adjoining infected houses not emptied, 6580.
 Chipagiri: Partial evacuation succeeded, 4964-73.
 Cutch Mandvi: Partial evacuation checked but did not stop plague, 13,453.
 Evacuation by instalments not so definitely beneficial as prompt evacuation, 23,202.
 Evacuation of the whole village preferable to its disinfection block by block, 10,349.
 Guntakal: Partial evacuation unsuccessful, 4144.
 Hardwar: Only partly evacuation resorted to successfully, though all but 500 people left the town voluntarily, 9039-44.
 Hubli: Clearing and burning down streets did not check progress of disease across the town, 1645.
 Hubli railway chawls, 2403.
 Hyderabad: Village evacuated, people lodged in railway waggons, 19,468.
 Instances in which partial evacuation was not successful, and instances where it proved sufficient, 23,241-4.
 Jawalapur: Partial evacuation failing, was totally evacuated, 9173-7, 9276-8.
 Kankhal: Evacuated in sections, had to be totally evacuated, 9090-4, 9101-2, 9113.
 Karachi: Evacuation done in sections; a very great undertaking, 26,676.
 Karachi: Methods of evacuation and segregation modified in the course of the epidemic, 11,143, 11,219-23.
 Karachi: Joria Bazar evacuated on 7th April 1898; people allowed to go where they pleased, went to other parts of the town, 11,240.

EVACUATION—*cont.*

Karachi: Very large part of native town evacuated in May 1898, 11,242-4.

Kotri: Dhobi quarter evacuated at beginning of outbreak, 12,551.

Kotri: Does not stop disease at, 3755.

Malegaon: Partial evacuation unsuccessfully tried, 18,070-5, 23,241.

Molagavelli: Partial evacuation failed, and whole village was evicted, 4992, 4999.

Nasik: Evacuation began with the Musulmans and Kalals, 24,481.

Nasik: Gradual evacuation of infected areas until three-fourths of the town were evacuated, 13,751, 13,771, 16,929-44, 23,241.

Nominal evacuation no use, 22,041, 22,045.

N. W. P.: Partial evacuation succeeded in villages where first case detected, 9134.

Palanpur State: Partial evacuation insufficient in the villages, 13,124, 23,241.

Panjab: Banga: Muhalla system of evacuation very unsatisfactory, 10,172, 10,232-5.

Panjab: Bilron: Partial evacuation and cordoning of the area successful, but the village re-infected from outside, 10,741.

Panjab: Partial evacuation in villages failed, 9977-9.

Partial evacuation a danger to the surrounding villages, 20,237.

Partial evacuation did not stop progress of plague, 24,431.

Partial evacuation inadequate, 10,231, 11,126, 19,459.

Partial evacuation may succeed if infection is in a block of houses separate from rest of town, 18,783.

Partial evacuation sufficient if early intimation of the first case is obtained, 13,797.

Partial evacuation very little good. Disease gets across open space, 1710.

Poona: No evacuation during first epidemic, but rigorous plague measures, 21,690.

Poona: Partial evacuation in first epidemic, 10,921.

Satara: Only partially evacuated—plague kept on, 22,297.

Sholapur: Partial evacuation not successful, 20,231-3.

Sinnar: Partial evacuation proved inadequate; total evacuation ordered, 13,790.

Sirohi State: Partial evacuations failed, and villages totally evacuated, 9821-2.

Sukkur: Success with 600 people, 3816.

Surat: Adopted in, during second epidemic, 15,734, 15,883, 24,430-1.

Timmencherla: Partial evacuation successful, 4124-8.

Trade not affected by piecemeal evacuation, 17.

Umreth: Partial evacuation ineffective; town completely evacuated on November 24, 14,041.

Undhera: Partial evacuation tried at, proved inefficient, 14,648.

Wardha: Nearly the whole evacuated, 6120.

Seasons favourable for Evacuation:

Ahmednager: People complained both of the cold and heat in camp, but ultimately preferred camp life, 18,996.

Evacuation successful in every season of the year, though more troublesome in winter than in summer, 10,361.

May and June the most favourable months of the year for evacuation in the N.W. Provinces, 8804.

Panjab: People complained of heat in hot weather, but suffered little with camps under trees, 10,239.

Plague can always be controlled without much expense and without compulsion in up-country districts during the dry season, 26,544.

Sirohi: People objected to go into camp on account of the cold, 9912.

The Rains and their Effect on Evacuation:

Ankleshwar: Plague stopped within a month after evacuation, notwithstanding the rainy season, 14,403.

EVACUATION—*cont.*

Bandra: Impossible, owing to the rains and the opposition of the Muhammadans, 18,929.

Bangalore: People driven out from the health camps by rains, 3267.

Cutch Mandvi: Salaya and Bada, people return to villages from camp on account of rains, with recrudescence of plague, 13,456.

Dharwar: Byahatti and other villages: Epidemic extremely severe where evacuation was impossible on account of the rains, 2168-93, 2192.

Dharwar: Villages in which plague was severe, as evacuation was impossible on account of the rains, 1601, 1719, 23,518, I. 92-3, 2168-2200.

During rains, entails great sufferings, 22,761.

During rains evacuation unsuccessful because huts built too solid and without ventilation, 22,048, 22,607-9.

During rains, exposure to cold and damp in the camps renders people more susceptible to plague, so that evacuation then fails, 22,737.

During rains, makes people more liable to the disease, 23,273.

Financially impossible to provide adequate shelter for the evacuated during the rainy season, 16,079.

Flat roof of houses the best place to camp people in black soil country if plague occurs during the rain, 23,591.

Hardships much greater in the rains in some parts than in others, 22,990.

Hubli: Wholesale evacuation not attempted, because impossible on account of the rains, 1943, 2001.

Igatpuri: Heavy rainfall interferes with evacuation, 16,837, 23,196.

Impossible in black soil, during the rains, without great hardships to the people, 24,560.

Impossible in the rainy season unless accommodation be prepared beforehand, 15,148.

Impossible on clay soil during rains, 5879.

Impossible to carry out completely in the rains, 5525, 22,606-10.

No increase in the mortality from other diseases, notwithstanding evacuation took place during the rains, 24,033.

Of rice-growing district in rainy season requires great and costly preparation, 22,196.

Panjab: Chak Kalal people driven back to village from camp by rains; increase of plague, 10,603 (8).

Panjab: In some parts evacuation on a large scale is possible during the rains, 10,237, 10,572.

Panjab: Mallupota: Great discomfort, half the camp under water, 10,236.

People will not stay out of their houses during the rains, 22,041, 22,077.

Possible during rains on rocky or sandy soil, 5878.

Prevention from leaving the town, the alternative in black soil country during the rains, 26,545.

Rains make supervision and evacuation impossible, 1588-9.

Sholapur: Little complaint by villagers against evacuation in the rains, 22,058.

Surat: Rains interfered with evacuation in second outbreak, 15,739.

Surat: Second outbreak during the rains; evacuation impossible, 24,417.

Thorough evacuation impossible in rainy weather, on a black cotton soil, 23,076.

Vathar and other villages: Evacuation unsuccessful, as, on account of rains, people kept on returning to the village from their huts, 22,041, 22,737.

Where rains interfered, percentage of deaths very high, 2169.

See Recurrence of plague.

Time taken to effect Evacuation:

Ahmednager: The Sadr Bazar evacuated in 24 hours in, 24,145.

Dharwar: When arrangements in working order, villages usually evacuated in three days, 23,163.

EVACUATION—*cont.*

Duration of epidemic depends upon the time the evacuation occupies, 22,600.
 Evacuation done in one month at Unkal, 2194.
 Guntkal: Evacuation takes one month, 4164.
 Hardwar: The time necessary to prepare a camp depends on the supply of materials and facilities of carriage, 9104.
 Hingunghat: Five hundred people or more removed in six hours, 5986-8.
 Jagjitpur, N.W.P.: Population 1,200, evacuated in three days, 9144-5.
 Malegaon: Total evacuation, with a population of 1,800, in about a fortnight, 13,777.
 Molagavelli: Takes four or five days, 5009.
 Nasik: Evacuation commenced on November 11th, 1897, and completed early in January, 1898, 14,733.
 Rahon: Total evacuation, with a population of 8,900, took 20 days, 10,460.
 Rohri (5,000 inhabitants): Evacuated piecemeal; operations commenced 17th April; town emptied 30th June, 12,038-41.
 Two months necessary for evacuation of 60,000 people, 23,903.
 Wardha: Evacuation commenced 6th December 1898; whole town evacuated by end of December, 6218-9.

Total Evacuation: Opinions and Instances regarding:

Ahmednagar: Evacuated November 1897, 2.
 Ahmednagar: Evacuation successful, 2008.
 Ankleshwar: Totally evacuated by August 23, 14,222.
 Backergunge: Inhabitants of village evacuated in a country boat, and entirely cut off from communication with their houses, 6448.
 Baroda: Total evacuation of, completed in March 1898, 14,614.
 Baroda: Total evacuation of villages in the Baroda district as soon as an indigenous case was discovered, 14,647.
 Kankhal: Ultimate evacuation of the whole town, 9094.
 Panjab: Total evacuation of a village as soon as more than one case appeared, 10,451.
 Sholapur: Description of evacuation, 5547.
 Sholapur: Wholesale evacuation considered too drastic a measure at the beginning of outbreak, 20,229.
 Total immediate evacuation the great remedy, 20,238, 22,595.

Unnecessary or Unsuccessful: Opinions and Instances that Evacuation is:

Belgaum: Disease already on the decline when evacuation was commenced, 22,910.
 Daman: Failed, except in the case of the Machis, who segregated themselves, 16,368.
 Disinfection without evacuation recommended for imported cases, 22,892, 22,896.
 Even without evacuation, plague spends itself and disappears in six or seven weeks from first attack, 16,250.
 Instance in which evacuation was not successful in staying the disease, 22,038.
 Not necessary if the house be good, 1069.
 Removal of people to open places without comfort or protection from weather is as harmful as the disease itself, 24,935.
 Rohri: Evacuation did not stop plague, as people took no precautions to keep away from cases after evacuation, and position of huts insanitary, 12,081-2, 12,120-1.
 Rough and ready method, 16,016.
 Satara: At Limb and Kahmatpur evacuation did not at once stop plague as people went to badly ventilated huts, 22,290-6.
 Unnecessary if early notification be given, 16,026.
 Uran: Evacuation failed to check plague quickly as huts overcrowded and people revisited houses, 22,752-87.
 Worthless unless combined with searching, 21,667.
 Would become unnecessary if information could be obtained early enough to limit the zone of infection, 21,711.
 See Rats: Death of rats regarded as a warning of plague, and action taken upon.

EXCRETA:

All may convey plague bacillus out of the body, I. 374.
 Bacillus present in, as a rule, I. 378.
 Infection by excreta and discharges, 9418, 18,130, 19,036-40.
 Mode of exit of plague bacillus from the body, I. 374.
 Rats, excreta of, supposed to cause infection, 15,459.
 Rats becoming diseased, taint articles with dung or urine, 992.
 Should be disinfected, 318.
 See Faeces.
 „ Scavengers.
 „ Sputum.
 „ Urine.

EXODUS OF PEOPLE FROM PLAGUE-INFECTED PLACES:

Causes of:

Ahmednagar: One thousand out of 3,000 run away from fear of plague measures in, 2011.
 Bombay: In 1896-7, 300,000 people said to have left the City, 1034.
 Bombay: Exodus in 1899 not due to fear of plague measures, 26,568.
 Bombay: Plague measures the principal cause of the general flight at the commencement of the epidemic, 20,911.
 Calcutta: Panic caused principally by the fear of segregation in, I. 468.
 Calcutta: 150,000 to 200,000 people out of 700,000 left the city, chiefly from fear of segregation, 6540-5.
 Dharwar: Eighteen thousand persons left in one week for fear of segregation and inoculation, 23,746.
 Dharwar: One-third of the people went out, but they were of the agricultural class, 1956.
 Enforcement of restrictive measures led to the running away of the people, 17,864.
 Evacuation impossible in a big city, only frightens people away, 7854, 8272.
 Fear of plague as well as of plague measures determines the exodus at the beginning of the epidemic, 20,249.
 Fear of the plague drove the people from the suburbs into the date plantations, 12,079.
 Ghoti: Deserted after the riot, 16,901.
 Karachi: People in first epidemic encouraged by the authorities to leave, but in the second not allowed to scatter, 11,130-5, 11,303.
 Karachi: People running away equally from fear of the plague and the plague measures, 11,695.
 Nasik: About 5,000 people left from dread of segregation, 13,832.
 Segregation practically impossible, drives inhabitants away, 7043, 20,237.

Details of:

Ahmednagar City: 16,000 people left the place when city was evacuated, 24,358-9.
 Ankleshwar: People leaving in numbers at the commencement of the outbreak from fear, 14,538.
 Bangalore City: 40,000 people left the city, 3504-5.
 Bangalore Civil and Military Station: 25,000 people fled, 2639, 2666.
 Belgaum: 12,000 people left, being encouraged by the authorities to leave, 22,824.
 Bhiwandi: 7,000 out of 14,000 people fled during plague, 14,549, 23,359.
 Bombay City: Details regarding exodus, 26,079-91, 26,559-66.
 Broach: About 18,000 people left the place, about 3,000 for camps near the town, the rest for other places, 15,502.
 Calcutta: Graphic description of panic when it became known that the Bombay plague had reached the town, I. 467.
 Cutch Mandvi: During the first epidemic people fled from the infected houses leaving the sick and dead, 13,494.
 Daman: Large number of people left by land before Surat cordon imposed, 15,997-9.
 Gadag: Flight of traders, the landowners remaining, 23,680.

EXODUS OF PEOPLE FROM PLAGUE-INFECTED PLACES—cont.

- Karachi: Population reduced through both epidemics by over 25,000, 11,716.
 Karachi: 25,000 people allowed to leave Karachi in January 1897, 11,130-6.
 Mysore City: Exodus less than at Bangalore, but extent not determined, 24,977.
 Palanpur: 3,000 or 4,000 people fled to villages around, 13,084.
 Panjab: Difference between the census population and the number of people ascertained by the roll-call in the villages of the Jullundur and Hoshiarpur districts, 9940-4.
 Poona Cantonment: Normal population, 24,000; reduced to 15,000 or 12,000 during plague, 10,903, 10,906, 21,314.
 Poona City: Second epidemic, population reduced from about 118,000 to 60,000 or 80,000 by exodus, 21,782-4.
 Risk that evicted people will go to other villages, 21,147.
 Sholapur: People in easy circumstances the first to leave the town, 20,250.
 Sholapur: About 35,000 people left the place, 20,245.
 Sholapur: People left the town before proceedings taken for general evacuation, 20,237, 23,989.
 Shopkeepers scatter on being evicted, but land-owners do not, 5891, 24,067-14.
 Surat: About 10,000 people left with passes, 24,461.
 Surat: Population increased by 20,000 through influx from Bombay, 15,863.

Prevention of:

- Concessions connected with inoculation have good effect in stopping flight at Bangalore, 2637-8.
 Concessions given to inoculated prevented the running away at Bulsar, 16,291.
 Exodus at Bangalore not checked by guarding roads and pass system, 2641-3.
 Hubli: Inoculated remain in larger proportion than uninoculated, I. 399.
 Hyderabad: Stringent measures adopted to prevent the people flocking to the district, 18,116.
 Mysore: Lenient measures prevented flight, and consequently there was very slow spread of plague in the town and neighbourhood, 24,970-8.

Spread of Plague through:

- Bangalore: Villages in the neighbourhood infected by refugees, 2669.
 Dharwar: One-third of those who left the town encamped near it, but about 19,000 people must have scattered over the country and spread plague, 23,767-70.
 Karachi: People left in great numbers in beginning of 1897, and carried infection to Cutch Mandvi, 3,708.
 Neighbouring villages infected by people flying from plague in towns, 24,016.
 Sholapur: Fifty-five thousand refugees infected every village between that town and Hyderabad, 5153.
 Sholapur: Refugees from, spread plague, 23,338.
 Sholapur: At least 20,000 people left, carrying the plague with them over the country, 5425, 23,332-8, 23,912, 24,016.

See Fear of Plague.

EXPERIMENTS ON ANIMALS:

- Experiments on animals of no value, except on those of the same class, 27,370.
 The test of the efficiency of a method should be made directly on the species of animal which it is intended to benefit, 26,515-22.
 See Inoculation with Haffkine's plague prophylactic.

EYE:**Clinical Features in Plague:**

- Complications of the eyes a clinical feature of plague, 20,897-901.
 Conjunctiva: hyperæmia of, a clinical feature of plague, 12,398.

EYE—cont.

- Inflammation of the cornea a clinical feature of plague, 16,763.
 Ophthalmia a clinical feature of plague, 10,215.

Infection through:

- Infection by microbes entering the body through the corners of the eyes and nostrils, III. 42.
 Infection entered through the conjunctiva in one case, 7211, 7215.
 Infection through the mucous membrane of the eye, 20,530.

Sequel of Plague:

- Complete disintegration of the orbits and disease of the eyes followed plague, 16,770, 16,822, 16,833, 20,896-901.

Sight, Loss of:

- Loss of sight through careless handling of bubonic discharge, 17,587.

FÆCES:**Life of Bacillus of Plague in:**

- Bacillus of plague dies in 2½ hours in fæces, 3611.
 Bacillus not recoverable from fæces after death, 1437.
 Can only be found in the excreta of fæces and urine when they contain blood, 22,367.
 Cannot be cultivated from fæces, 1436-7.
 Found in fæces, 3556-64.
 Negative results as to discovery of plague bacillus in four cases examined, and positive result in a fifth case where matter examined was almost pure mucus, 25,363-4.
 Negative results as to discovery of plague bacillus in cases examined, 17,271.
 Unsuccessful attempts at isolating the bacillus from fæces ascribed to the rapid growth of contaminating micro-organisms, 26,391.
 See Excreta.
 „ Rats, discovery of bacillus in, and infection by.

FAKIRS:

- The fakirs at Bhiwandi remained entirely free from plague, 22,123-9.

FEAR OF PLAGUE:

- Deccan Brahmans are very cautious with regard to plague, 14,367.
 Fear, &c. of plague drove the people at Rohri from the suburbs into the date plantations, 12,079.
 Fear of plague is growing on the people, 26,568.
 Fear of plague shown in Ankleshwar, 14,566.
 Fear of plague makes people neglect to dispose of their dead, 7,420, 9,895-8, 13,494, 18,569.
 Fear of plague did not at first move people at Dharwar to take any steps, 1614.
 Great fear of infection among the natives in the hills, 8829, 26,615.
 Great fear of plague shown in Bangalore, 2625-6.
 Native dread of plague, 9898.
 People more afraid of plague officers than of plague, 15,130.
 People showed much fear of the plague in the Panjab, 10,263.
 People who are afraid of the disease most liable to be affected by it, 10,857.
 See Exodus of people from plague-infected places.

FEMALES.

- See Inoculation with Haffkine's fluid. *After Effects, Bars to Inoculation and Dosage.*
 „ Sex.
 „ Pregnancy.

FEVER, RELAPSING:

- See Relapsing Fever.

FLEAS:

- Fleas, no plague microbes found (Hankin), 8600.
 Fleas in Bombay hospitals do not convey infection, 20,640, 20,999.
 Fleas in the plague infected villages of the Kaira district, 14,081.

FLEAS—cont.

- Fleas, plague microbes said to be found in, 151.
 Fleas, independent of plague, Baroda noted for its colonies, 14,642.
 Fleas and bugs possible agents for carrying infection, 9,500-4.
 No evidence that fleas carry infection, 20,640.

LIGHT OF PEOPLE FROM PLAGUE-INFECTED PLACES.

See Exodus of people from plague-infected places.

FLOORS:*Disinfection of:*

- Ahmedabad: Digging up of floors resorted to as disinfecting method, 13,923.
 Ammonia and albumenoid substances in floors hindrances to chemical disinfection, 20,217-20.
 Bacillus of plague survives disinfectants in infected floors, 5159.
 Danger in digging up floors minimised by whitewashing it, 5554, I. 456.
 Dharwar: No plague after ventilation, &c., of dug-up floors, 23,778.
 Experiments on best method of disinfecting floors, II. 10-3.
 Experiments on effect of perchloride of mercury on infected floors, 18,828-63.
 Experiments showing that the number of micro-organisms in floors is less after than before disinfection, 18,801-27.
 Guntakal: Upper two inches of floor dug up and burnt to disinfect, 5117.
 Jawalapur: Digging up of floors, 8934.
 Khandraoni: Floors dug up, 9659.
 Mud floors very difficult to disinfect, 8558.
 Palanpur: Digging of floors resorted to as disinfecting measure, 13,091-4.
 Panjab: Taking up the floors of infected houses a dangerous and expensive process, but resorted to, 10,039.
 Rohri: Disinfection by digging up floors, 12,029.
 Stone floors much easier to disinfect than cow dung, 8269, 8562.
 Stone floors cannot be removed for disinfection, 6442.
 See Burning.
 .. Cow-dung.
 .. Kiln burning.
 .. Perchloride of mercury.

Infectivity of:

- Bacillus of plague on aerobic species cannot live far under the surface of floors, 10,040.
 Bacillus of plague extends to a certain depth by growth, 11,457.
 Bacillus of plague generally located in floors and walls, 9682.
 Bacillus of plague may be disseminated by rain and carried into buildings by soil adhering to the feet, 6900.
 Cases frequent in those who sit on the ground, 5097.
 Eating food in infected localities off the ground, a cause of infection, 18,108.
 Fact that women are, as a rule, more affected by plague than men would point to the floor as seat of infection, 16,216.
 Floor, infection confined to, 23,249.
 Floor one of the only factors which has proved infective, 21,717.
 Floors principal source of infection, 24,311.
 Floor probable medium of infection, 9617.
 House with pukka floors remained immune, while cases frequent in houses with earthen floors, 19,442.
 Houses with cemented and tiled floors less attacked than houses with mud floors, 22,650.
 Infection spread by earth and cowdung floors, 21,725.
 Infection thrives better in houses with mud floors than with stone floors, 16,222-8.
 Infection of plague mostly found in mud houses, 10,373.
 Instance to show greater infectivity of mud floors, 17,288-91.
 Parsee houses, Poona, plague cases mostly on ground floors, 25,244.

FLOORS—cont.

- People living in huts and on ground floors of mud are more susceptible than those living in the top floors of wood, 19,100.
 People who live in upper stories escape most, 18,569.
 Plague cases in Bombay tabulated according to the floor on which they occurred, 916.
 Plague cases not so numerous in upper as lower floors of chawls in Bombay, 2784, 28,422.
 Poona: Most cases on ground floor, which are more crowded and worse ventilated than upper floors, 21,519-22.
 Practically no stone, wooden, or concrete floors in Poona, 12,730.

See Beds.

.. Boots.

.. Habits of the people affecting liability to plague.

.. Soil.

FLYING COLUMNS:

- Composition of the flying columns, organised to carry out disinfection in places where special staff was urgently required, 16,992.
 Organisation of flying columns, 17,158-9.
 Staff and duties of flying columns, 21,618-29.

FOOD:

- An acid re-action in articles of food kills the bacillus in a very short time, 8544, II. 7.
 Infection by the alimentary canal is possible, 7076, 7211.
 Natives may be infected by eating food directly off infected ground, 18,103, 22,021.
 No post-mortem evidence of infection by the alimentary canal or stomach, I. 368, I. 375.
 See Mahamari: *Food and Grain and Mahamari.*

FORMIC ACID:

- Result of experiments, II. 7.

FORMS OF PLAGUE:

- See Atypical forms of plague.
 .. Bubonic plague.
 .. Bullæ.
 .. Clinical features of plague.
 .. Pestis minor.
 .. Pneumonic plague.
 .. Post-mortem appearances in plague.
 .. Septicæmic plague.

FOWL.

See Birds.

FUMIGATION:

- Fumigation with resin and sulphur in Daman native villages used as a disinfecting measure, 25,448.
 See Sulphur.

FUNERALS:

- Backergunge: Cases of plague contracted by attendance at funerals of pneumonic patients, 7331-9, 8463-9.
 Baroda, Gungaur: Epidemic due to attendance at the funeral of a pneumonic patient, 15,182-5.
 Bombay: Three or four friends of a man, dead of plague pneumonia, got plague by attending his funeral, 18,212.
 Bombay: Plague contracted from contact with the corpse of a pneumonic patient, 19,099.
 Calcutta: Funerals are powerful features in spreading the plague, II. 538.
 Clothes distributed at a funeral might be calculated to spread plague, 9802.
 Hubli: Woman with plague at Hubli in February 1897 contracted it by attending a funeral in Bombay, 2396.
 Kakhindi: Plague due to attending a funeral, 19,513.
 Sirohi: Spread of plague after attendance at funeral of first patient, 9702-9, 9794-802.
 Surat: Plague brought to Umra by people who had attended a plague funeral elsewhere, 2054.
 Surat: Plague kept alive in camps because people got infected at funerals and gatherings to lament over the dead, 24,441.

FUNERALS—*cont.*

- See* Acharj.
 „ Corpse bearers.
 „ Domes.
 „ Habits of the people affecting liability to plague.

GANCHI:

- First cases of plague at Ankleshwar among the Ganchi, 14,209.
 Houses of Ganchis in Surat very dirty: Sunars fairly clean, 2048.
 Mortality in Government health camp accounted for by it being occupied by Ganchis, who hired themselves out as corpse bearers, 24,422.
 Severe outbreak among the Ganchis in Surat, 2047.

GANJA:

- Immunity of ganja smokers from plague, III. 43.

GARHWAL:

- See* Bombay: *Introduction of plague into.*
 „ Mahamari and Sanjar.

GEOLOGICAL CONDITIONS AND THEIR RELATION TO PLAGUE:

Alluvial Soil:

It is doubtful whether alluvial soil is favourable to plague, I. 378.

Black Soil:

Chemical composition of black cotton soil, 8324.
 Plague rages most fiercely in black soil, 23,649.
See Evacuation: *The rains and their Effect on Evacuation.*

Deccan Trap:

Plague cases almost entirely over Deccan trap and crystalline rocks; rare in alluvial belt, I. 295.

The connection between Deccan trap and plague merely due to infection spreading from Bombay over neighbouring part of the country of this formation, I. 295.

Geological Formation of Plague Areas:

Description of geological formations of the plague-stricken areas, I. 294-6.

No proof that geological formation has any effect on plague except by its physical formation, 8311, 8326.

Rocky and sandy soil and climate of Hyderabad Sind favourable for combating plague, 18,142.

Something in the environment of Calcutta inimical to the spread of the plague in epidemic form, 7627.

Laterite:

Laterite-supporting rocks coincide with chief plague areas, 8315.

Plague practically occurs in all soils of India and at present in the soil directly covering laterite, 8317-8.

Water passing through laterite would dissolve iron, which may be favourable to pathological organisms, 8319.

Porous Soils:

Medical opinion holds that porous soils are favourable to the spread of epidemics, 8326.
 Porosity of the soil has probably some connection with plague, 8311.

GLANDS:

Clinical Features of, in Plague:

- Description of typical bubo, I. 379.
 Diffused discolouration over the bubo and ecchymosis underneath the skin in plague patients, 9573.
 Mumps in early stage sometimes resemble buboes, 10,235.
 Necrosis of; four instances, two recover, 6940.
 Suppuration generally occurs, 2371.

Diagnosis of Plague:

- Bubo alone not sufficient, 7530.
See Pneumonic plague: *Clinical features.*
 „ Septicemic plague: *Clinical features.*

Y 6266.

GLANDS—*cont.**Disappearance after Death:*

Cases of bubonic plague in which the bubo disappeared after death, 20,010-6.

See Corpse inspection. *Efficacy of Corpse inspection in identification of plague.*

Discharge, Character of:

Loss of sight through careless handling of bubonic discharge, 17,587.

Peculiar character of the slough, 20,733.

Discovery of Bacillus of Plague in:

Found in bubo during life, 7189.
 Found in bubo, spleen, liver, and lungs of plague corpses, 7189.

Found in enormous numbers in buboes, I. 370.
 Found in glands, kidney, spleen, liver, and blood, I. 370.

Found in the bloody discharge from the nose in patient with sub-mental buboes, 26,259.

Gradually disappears from bubo as soon as suppuration sets in, 20,613.

Invariably recovered from buboes before suppuration has taken place, but none after, 25,370.

Not extracted from pus of bubo, 1530.

Not found in pus of buboes, 1,530.

Other than plague bacilli found in pus from buboes, 26,265.

Plague bacilli not found in lymph of bubo in patients whose temperature had gone down, 26,396.

Fatality with reference to:

Cases with multiple buboes generally fatal, 14,853.

Fatal forms of plague do not develop buboes, 10,199.

Sixty per cent. of multiple bubo cases recovered among the inoculated, 14,997.

Frequency of:

Bubonic cases represent about 75 per cent. of the whole number of cases, 9389.

Enlarged glands without pronounced plague a common occurrence among plague workers, 18,665.

German Plague Commission report cases of swollen glands unknown to patient, 7003.

Lymphatic glands enlarged in about half the cases of primary carbuncles and buboes, 12,487.

Number in Plague:

Generally one; highest number seen, 17, I. 370, 2368.

Position of:

Axillary buboes represent about 14 or 15 per cent. of the total cases, 9389.

Glands affected by proximity to spot of entry of infection, 1410.

Glands directly related to the seat of inoculation, bubo not necessarily situated in the group of, 9566.

Groin, generally in the, 298.

In buboes of the neck local lesion generally found on the surface of the tonsil, 11,580.

Notes on the relative frequency of the buboes in different situations, 12,395-6.

Observations on the appearance and position of buboes in the patients of the Sassoon Hospital, 12,897.

Table showing the position of buboes in 3,128 cases, II. 95.

Table showing the site of the glands in 101 plague cases, II. 196.

See Inoculation with Haffkine's fluid: *After-effects—Buboes.*

Post-mortem Appearance:

Enlargement and injection of the mesenteric glands and enlargement of the epiploic vessels constant features in plague cases, 9549.

Lymphatic and mesenteric glands generally found enlarged in cases where no external buboes appeared, 10,419.

Post-mortem appearance of glands, 1419-20.

GLANDS—*cont.**Prognosis of Plague :*

Prognosis bad when cases with small buboes, 21,652.
 Prognosis bad with slight glandular enlargement, which indicates fatal septicæmia, 6986.
 Prognosis is good if the gland is confined to the femoral region, 13,025, 15,308, 16,544.
 Suppuration of bubo a good prognosis, 1529.

Sexes, in :

In females mostly axillary, 18,051.
 Women in C. Ward, Bombay, suffered more from axillary buboes than men, 18,049.

Time of Appearance :

Attack, during, may develop, 12,398.
 Beginning of fever, have been noted before, 12,398.
 Convalescent, may appear when patient is, 2,370.
 Details of cases showing period between beginning of illness and appearance of buboes, 20,027, 20,032.
 Early symptom, buboes a very, 10,204.
 See Glandular fever.

GLANDULAR FEVER :

Bacteriological Examination :

Cultivations of the blood taken from hospital patients of the Shropshire regiment remained absolutely sterile, with one exception, where a strepto-coccus was found, 11,035.
 Cultures from the blood of two men of the Shropshire regiment injected into rats and guinea-pigs produced no effect whatever, 26,859.
 Microscopical examination for the malaria plasmodium in patients of the Shropshire regiment gave no result, 11,017.

Clinical Features of :

Cases with or without buboes common and long known in Calcutta with 40 per cent. mortality and not clinically to be differentiated from plague except, perhaps, by look of tongue and infectiousness, 8209, 8213-17, 8220-31.
 Clinical features of glandular fever have nothing in common with those of bubonic plague, 6974.
 Clinical record of cases of lymphatic gland enlargement in the military hospital, Mian Mir, 11,065.
 Difficult to tell glandular fever from plague, 1161-4.
 Fever and swollen glands possible apart from plague, 6958.
 Glandular enlargements from causes other than plague not uncommon, 613-4.
 Plague quite distinguishable from ordinary fever with swollen glands, 6975-9.
 Several men of the Shropshire regiment ill with dysentery developed buboes, 11,023, 11,053-4.
 Typical symptoms of, I. 521.

In :

Bengal: At certain times of the year people suffer from enlarged inguinal glands, ascribed to climatic influence, I. 488, I. 521.
 Bengal: Glandular fever very common in poorly fed low caste natives, who are constantly exposed to malaria, 7636.
 Bombay: Glandular fever is not plague. No cases seen during epidemic, I. 382.
 Bengal: No bubonic fever resembling plague in Bengal, 7322.
 Calcutta: Cases of, may be found at any time, 8180, 8372-5.
 Calcutta: Cases seen all amenable to treatment, 7846.
 Calcutta: Appearance in 1858. Very fatal, 8107-8.
 Calcutta: Details of cases of bubo and fever among the soldiers since 1894, 11,020.
 Calcutta: Record of cases at Station Hospital, I. 495-6.

GLANDULAR FEVER—*cont.*

Calcutta: Seen every year from 1858 to 1898, 8114.

Mian Mir: Cases of glandular fever like those observed at Calcutta observed in Panjab, 11,050.

Navy: Cases of non-venereal bubo, I. 495, 27,005-8.

Poona: Many cases decidedly not plague, 7636.

Shropshire regiment: Cases of bubo and fever among the men at Calcutta during the summer of 1896 attributed to malaria, 11,017.

Infectivity of :

Non-infectious and non-contagious, 8121.

See Calcutta; *Plague in 1898 and Suspected cases of Plague in 1896 in Calcutta.*

GOATS :

Effects of Virus on :

Goats wasted away under repeated doses of plague virus, 133.

Secure local immunity after repeated doses of plague virus, 115.

Immunity from Plague :

Unaffected by plague, I. 378.

Serum of :

Serum of goats used for inoculation, 130-3.

GOLAS :

First detected cases in Umreth in the Gola quarter, 14,027.

Mortality in Government health camp accounted for by it being occupied by Golas who hired themselves out as corpse bearers, 24,422.

Refused to move to other sites, municipality too poor to apply the Land Acquisition Act, 24,459.

Spread the infection to the other quarters in Surat, 16,064.

Suffered most from plague in Surat, 16,108.

GRAIN :

Discovery of Bacillus of Plague in :

Experiments on, with several kinds of grain and seeds, II. 16-17.

Found in grain, I. 442.

Failure to isolate bacillus from grain, 619-20, 635, 995.

Not found in supposed infected grain bags, grain, &c., 635.

Series of experiments for the recovery of the bacillus from grain, 26,386.

Disinfected by Sun :

* Grain sundried at Hinganghat to disinfect it, 6066.

Grain infected by the excreta of rats disinfected by exposing to the sunlight, 9409.

Grain exposed to the sun for six hours, 19,317, 10,935.

Infection due to :

Damaged grain source of contagion to rats, thence to men, III. 42.

Danger of infection through clothes, much less than through bags containing grain, in which rats would nestle, 994.

Dharwar Jail: Possible introduction of plague in grain, 2241, 2289.

Grain bought from infected Banniah's shop by woman; she got plague; no other source of infection traced, 23,005-7.

Grain is eaten unparched as well as parched, 9455.

Grain may be infective if infected by rats, 9399.

Grain stolen from a house evacuated by Banniahs; plague followed among the Mangs who stole it, 23,004.

Infection by grain, 23,004, 23,005, 13,814, 13,834.

North-West Provinces: Infection supposed to be imported at Kankhal by infected grain from Hardwar, 8774.

GRAIN—*cont.*

North-West Provinces: Jawalapur, possible introduction of plague by grain, 9153.
Possible introduction of plague at Reri, by grain and eatables brought from infected areas, 12,447.
Rats and grain somehow responsible for spread of plague in Bombay, 8277.
Rats, clothing, and some unknown agent in the retail grain shops spread plague, 11,278, 11,430.
Rotten grain suspected at Bombay, 54.
Theory that grain kept long generates the plague bacillus, 17,019-20.
Sholapur: Disease said to be due to importation of infected grain from Karachi, 1000.

See Mahamari: Food and Grain and Mahamari.

Infection not due to:

Grain not a factor in the dissemination of the disease, 16,316, I. 377-8.
Not through grain, 20,636.
Not carried by grain or articles of food, 7511.
Rats proved not immune by subsequent injection eat with impunity artificially infected grain, 635, 642.

Life of Bacillus in:

Bacillus not recovered after 7 days in grain artificially infected and dried, 26,386.
Dies in sterilised solution of rotten grain, 3669.
Experiments to show that the bubonic microbe derived from pure cultures perishes within 13 days after being added to specimens of grains and seeds, II. 17.
Results of experiments with several kinds of grains and seeds on life of bacillus of plague, II. 16, 17, 18.
Virulence of the microbe in grain only persistent for a few days, 8535.

GRAIN DEALERS:

See Banniahs and Traders.

GRANARIES:

See Banniahs and Traders.

GROWTH OF BACILLUS OF PLAGUE:

See Bacteriological characteristics of bacillus of plague.

GUINEA PIGS:

Discovery of Bacillus in:

Easily discovered in the bronchial contents of guinea-pigs in laboratory experiments, 27,341.
Found in the intestines of a guinea-pig, 27,336.

Involution Forms of Bacillus of Plague in:

Involution forms of plague bacilli seen after death at the seat of inoculation in a guinea-pig, 26,227.

Post-mortem Appearances:

Greater variety in those of guinea-pigs than in those of rats, 26,409.

Virulence of Bacillus of Plague in:

Virulence of bacillus of plague increased by a series of intra-peritoneal passages through guinea-pigs, 26,434.

GUNNY BAGS:

Discovery of Bacillus of Plague in:

Microbes not found in sacks or other article of merchandise, 995.
None found in gunny bags in the Joria Bazar at Karachi, 11,210.
Not found in, 635.
Rats proved not immune by subsequent injection, eat with impunity supposed infected bags, 635-642.
Series of experiments for the recovery of the bacillus from artificially infected grain and gunny bags, not recovered after seven days, 26,386.

Disinfection of:

Grain, sun-dried at Hinganghat, and the bags boiled, 6066.

GUNNY BAGS—*cont.*

Gunny bags imported from infected places sent to Kiamari camp for disinfection by steam, 12,017.

Only cargo subject to disinfection at Karachi are the gunny bags which are sent back empty, 12,212.

Infection by:

Bhujpur: Infection said to be imported in gunny bags from Bombay, 13,462-71.

Idea that bags carry infection through rats, and that Karachi was infected by them in the second epidemic, 817.

HABITS OF THE PEOPLE AFFECTING LIABILITY TO PLAGUE:

Habits connected with Animals:

Jains and Banniahs averse from killing any animal or insect, 13,354.

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Constituents of Haffkine's fluid.

Re-sterilisation of Haffkine's fluid.

Sterility of Haffkine's fluid.

See also, Inoculation with Haffkine's Plague Prophylactic, under which the entries are given under the following subheads :

Adoption of Inoculation as a general Plague Measure.

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Age and Inoculation.

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Bombay : Patients go more readily now to hospital, 444, 7863.

Bombay : People had no belief in hospitals, 17,950.

Calcutta : Manicktollah Hospital, patients will not go to, 7717.

Calcutta : Natives say they are not properly treated at Manicktollah, 7722.

Calcutta : Patients go fairly readily to Mayo Hospital, 7717.

Calcutta : Very friendly relations with relatives of patients, 6966.

Dharwar : Patients come readily, 1863.

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Hardwar : Great objection of the natives to go to hospitals, 8800.

Hindu notions averse to taking people to hospital, 22,581.

Karachi : People voluntarily brought sick to hospital huts in camps Trans Lyari, 11,246.

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 Poona: Relatives willing to send patients to hospital as soon as definite symptoms of plague develop, 25,842.
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Caste Prejudices and Caste Hospitals :

Bangalore: Caste prejudices respected as far as possible, 3483.
 Calcutta: Caste prejudices respected in hospital, I. 471.
 Cutch Mandvi: Caste hospital much approved of by the people at, 13,443.
 Cutch Mandvi: No difficulty to get people to caste hospitals, but considerable objection to be taken to Government hospitals, 27,191.
 Surat: Caste prejudices considered in the Hindu Hospital, 16,137.
 Surat: Concealment punished in Surat by removal to general instead of caste hospital, 24,417.

Friends and Relatives of Patients, Arrangements for :

Broach: Families should never be separated in hospitals; good results of system, 15,500.
 Dharwar: Friends allowed to stay with patients if they like, 1867.
 Each hospital should have a house attached for some of the friends of patients, 21,544.
 Friends encouraged to come to the hospital with the sick, 6963.
 Hubli: Friends allowed to accompany patients to hospital, 1656.
 Poona: A friend of the patient taken to hospital with him, 10,915, 21,259.
 Surat: Accommodation for friends of patients in Hindu Hospital, 16,137.

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A properly made plague hospital does not require disinfection every time a patient dies, 19,515.
 Attendants and friends of patients escape the disease in hospitals because they are under much better hygienic conditions, 14,713.
 Bangalore Civil and Military Station: Of 16 attendants and ayahs, four got plague, 2737-8.
 Bangalore Civil and Military Station: Friends of patients allowed to accompany them and attendants do not suffer, 2897-900, 2922-3, 3483.
 Bombay: Arthur Road Hospital: very few attendants attacked, 20,973, 20,969.
 Bombay: Cases among attendants at Bombay, 7218-9.
 Bombay: No cases noted of infection of hospital servants by Major Deane while in Bombay, 2789.
 Bombay: No disinfection at first of plague case in Jamssetjee Hospital, Bombay, but no bad results, 1439, 1516.
 Bombay: Staff and attendants not often infected, 22,489.
 Broach: No infection in hospital, 15,500.
 Calcutta: Antiseptics used but particular precautions not taken by nurses, 7083, 6961-2.
 Calcutta: Disinfection carefully attended to, 7022.
 Calcutta: Medical College Hospital not an ideal place, ventilation leaves much to desire, 7082.
 Calcutta: No infection in the Medical College Hospital, 6921, 6961.
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 Calcutta: No infection in the Medical College Hospital, 7081.
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 Clothing not very infectious to hospital attendants, 237.
 Contact with plague patients in plague hospital said to be means of conveyance of plague, 19,031.

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Cutch Mandvi: Fourteen plague nurses working in Mandvi Hospital during first epidemic; very few casualties among the attendants or relatives, 13,527, 13,533-6; I. 351.
 Dharwar: 30 relatives attending on patients developed plague, and two bubonic and four pneumonic cases occurred among hospital staff; pneumonic infected from pneumonic cases; bubonic not from pneumonic cases, as there were none such in hospital at the time of their infection, 1896-1901.
 Dharwar: Attendants on the sick not very often attacked, 1953.
 Freedom from infection due to good sanitary conditions, 1440-1, 10,376.
 Gadag: Hospital staff and attendants not infected; cases that occurred contracted outside, 23,684-91, 23,757.
 Hubli: Few cases amongst hospital attendants at Hubli and Dharwar, 1704.
 Panjab: Hospital attendants usually not attacked, 10,488.
 Patients spit about everywhere, 20,628-7085.
 Plague cases among doctors, 7220.
 Plague cases among nurses, 7220, 7661.
 Plague mortality among those connected with hospitals, 7220.
 Poona: People in hospitals free, disease not very infectious, 12,876-7, 12,937, 21,539.
 Porbandar: Few cases in hospital, where only six pneumonic cases treated, 13,724-7, II. 484.
 Sirohi: Few cases among attendants and plague officials, 9878-80, 9906-9.
 Sirohi: High mortality among the sick attendants accounted for by their being in incubation stage on arrival at hospital, 9907.
 Surat Government Hospital: Few attacks among staff and attendants, 15,792-6.
 Surat: One-fourth of the staff and attendants in the Hindu Hospital were attacked; no shoes were worn, the floors were bad, and disinfectants not properly used, 15,797, 15,825.
 Surat: Only 19 cases among 1,200 relations of patients in the Hindu Plague Hospital, Surat, 16,149.
 Umreth: No deaths among the attendants in the Plague Hospital or the village hospitals, II. 233.
 Very slight infectiousness in a properly kept hospital, 1439.

Mortality in Hospitals :

Ankleshwar hospitals: table showing, with results, admissions to the, II. 246.
 Bangalore City: 66.7 per cent., 25,024.
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 Bangalore Military Hospitals: 71.4 per cent., III. 286.
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 Bombay: Parel Hospital, I. 257.
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 Calcutta: 80 per cent., 6550.
 Calcutta: Mayo Hospital, description of plague cases in, 7015.
 Calcutta: Medical College Hospital, I. 244.
 Dharwar Hospital: Case mortality, 58 per cent., 1857.
 Gadag: Statistics relating to, 23,694-5.
 Karachi Civil Hospital: From March till August 514 cases treated with a mortality of 60 per cent., 12,342.
 Mysore: 49 per cent., 25,024.
 Poona, Sassoon Hospital: 74.4 per cent., 12,896.
 Umreth Plague Hospital: Forty-eight deaths out of the 64 cases admitted to, II. 233.

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- See Medical treatment, European.
 „ Removal of the sick to hospital.
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Private Hospitals:

- Ahmedabad: Private hospitals established, 13,890.
 Bombay: Private local hospital started in the Telang property whilst the blocks were disinfected, 17,865.
 Calcutta: Large number raised by private subscriptions, and licensed, I. 469.
 Calcutta: Particulars of private hospitals, I. 470.
 Calcutta: Private hospitals little resorted to, II. 533.
 Karachi: Private hospitals started by several communities, 12,523.
 Porbandar: Hospitals started by private persons, 13,702.
 Private plague hospital and segregation camp popular with the people, 12,522.
 Surat: Hindu Hospital maintained entirely by private contributions, 16,137.

Provision, Organisation, and Staff of Hospitals:

- Ahmedabad, list of plague hospitals, 13,890.
 Anand: Plague hospital built of millet seed stalks, lined with bamboo matting which was whitewashed, 14,111.
 Bangalore: The details of the camp hospitals at, I. 117-9.
 Bombay: Hospital arrangements, accommodation for 1,000 cases, 251-71, 276-84, 417-8.
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 Bombay: Very inadequate staff in plague hospital, 25,508-32.
 Calcutta: Arrangements for hospitals in different wards of the town, 6756.
 Calcutta: Manicktollah Hospital, description of, I. 469.
 Dharwar: Staff (beds 76), 1852, 1854, 2063, 2071.
 Hardwar: Old temple used as plague hospital, 9332.
 Igatpuri: Municipal school turned into hospital, 16,887.
 Inspector-General of Civil Hospitals not responsible for supervision of municipal hospitals, 276-8.
 Inspector-General of Civil Hospitals responsible for inspection of municipal hospitals, 7742.
 Plague hospitals should be located at a distance of at least half a mile from the town limits, 13,928.
 Poona: Sassoon Hospital, special building for plague cases, 12,941.
 Porbandar: Eleven plague hospitals, 13,702.
 Rural areas: No hospitals in, 1661.
 Surat: Native hospitals good at, 5.
 Surat: Proper hospital system introduced by Lord Sandhurst, 16,137.
 Surat: The Parakh Dharamsala turned into a municipal hospital, 24,417.
 Sweepers and police on duty at the plague hospitals at Hardwar relieved every 10 days, 9337.
 Tents as hospitals better suited for cold than hot weather, 12,943.
 Ward hospitals more suitable than one central plague hospital, 21,544.

HOT WEATHER:

Abatement of Plague during:

- Ahmedabad: The dryness of the atmosphere probable cause of partial evacuation proving there more successful than at other places, 13,937.
 Bombay Presidency: During the hot season the plague declined in, 2.
 Bronch: The habit of the people to sleep outside their houses in hot weather the reason why plague has remained dormant in May and June, 14,385.
 Heat prevents plague from spreading fast, 5507.

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- Hot winds appear to act as natural disinfectants, 8.
 Hyderabad: The dry and very hot climate and rocky and sandy soil favourable conditions in combating the plague, 18,142.
 Kolaba: Plague occurred in each of the infected towns in, in the cold weather, and dropped as the hot weather came on, 17,650.
 Panjab: In hot weather plague becomes milder in type, 10, 332.
 Plague decreases in hot weather, I. 378, 1035.
 Sirohi State: Relation between temperature and epidemic very marked in, 9902, App. XXXII.
 Table of maximum and minimum temperature during epidemic in Baroda City, II. 283.
 Temperature of 80° to 90° the predisposing conditions to plague, 17,354.
 Temperature in Bengal before outbreak of plague below normal, 6874.
 Variable temperature; a rise in the plague attacks coincides with a fall in the temperature, in places with a, 22,433.

Epidemic of Plague during:

- Cutch Mandvi: Plague begins in hot weather, 2.
 Hot weather seems to have no influence on the virulence of the epidemic, 25,682.
 Kankhal: Plague did not spread in May on account of the hot weather conditions, people being much out in the open and sleeping out, 9071.
 Karachi: Heat did not affect plague in, 1700.
 Sukkur: Epidemic at its height when temperature was 115 degrees in the shade, 11,446.
 Sukkur: Rise in temperature no influence on the disease in, 18,441.
 Temperature: Has nothing to do with plague epidemics in India, 11,444.

HOUSE.

See Disinfection.

- „ Evacuation: *Length of period of evacuation.*
 „ Floor.
 „ Incubation period: *Incubation period in plague cases contracted by visits to infected places and houses, or contact with the sick.*
 „ Infection by locality.
 „ Soil.
 „ Recurrence of plague in the same house or locality.

HOUSE SEARCHES:

Adoption of and Experience in:

- Ankleshwar: House to house visitation gave good results, 14,218-9.
 Bangalore City: House searches not adopted on account of the attitude of the people towards them, 3279.
 Bangalore Civil and Military Station: System of house searches adopted, 2572.
 Baroda: House to house inspection at the commencement of second outbreak very unsatisfactory, 14,601.
 Bombay: House to house visitation by native gentlemen unsuccessful, 17,954.
 Bombay: On account of large chawls and shifting population house searching of little use, 16,987.
 Bombay: Opposition during the first epidemic to search parties, 18,465.
 Bombay: Raids only made at odd times in worst quarters, 10,949-51.
 Bombay: Search parties resented in, and cases concealed, 487-9.
 Bombay: Search parties with European agency resulted in plague being driven out of one district but only into another, 18,464, 25,794.
 Bombay: System of house searching abandoned, 8257.
 Cutch Mandvi: Search parties instituted towards the end of April 1897, 13,375.
 Karachi: Search parties employed with good results in camps, though results in the town were bad, the people scattering, and no information being obtained, 11,370-2.

HOUSE SEARCHES—cont.

Kolaba: In the second epidemic no resistance offered to the search parties by the people, except in 5 Muhammadans' houses, 18,465.
 Kolaba: Search parties were good friends with the people, as they never interfered with caste prejudices, 18,466.
 Poona: House searches successfully carried out, staff strong enough to prevent concealment, 10,908-13, 21,216, 21,259, 21,269.
 Poona: Second epidemic, house searching by volunteers with help of soldiers, 21,494, 21,526, 21,576.
 Shikarpur: People induced to use precautionary measures to avoid search parties, 18,288.
 Surat: House to house search of no practical utility, 16,004, 24,417.
 Umroth: House to house visitation every morning, 14,039.

Agency for:

Karachi: Objection to use of military in, 12,527.
 Palanpur State: Darbar Sepoys employed for search parties, 13,069.
 Poona: Search parties of European and native soldiers employed, 10,908, 21,259.
 Voluntary organisations for the detection of plague more successful than military search parties, 18,387.

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House to house visitation for discovering plague cases absolutely intolerable to the people, 25,554.
 House to house visitation impossible without considerable annoyance to the people, 16,587.
 In large places only possible methods are searching, &c., 10,963, 16,987.
 Room to room visitation in tenements impossible on account of the irritation it would cause, 7619.
 Search parties did more harm than good at Surat, 24,417.
 Search parties do more harm than good, 18,978.
 Search parties not a good thing, too unpopular, 8259.
 Searching ought to be the last means resorted to on account of the objection of the people, 10,964.
 Ward system with superintendence a better measure than search parties, 18,975.

HOUSING:**Existing Conditions:**

Ahmednagar: Contains houses in which air and light had never had access since they were constructed ages ago, III. 253.
 Ahmednagar: Number of houses condemned in, re-building on a particular pattern, ventilation, big doors, windows, and height of roofs specified, 24,191.
 Bangalore: Overcrowding in houses, 5258.
 Bangalore: Statistics of housing, 3386, I. 128.
 Baroda: Dwellings insanitary, 15,193.
 Belgaum: Description of houses in, 22,810.
 Bombay: Conditions vary in different parts, 8295-6.
 Bombay: Conditions very bad, 17,692, 26,638.
 Bombay: Description of houses and difficulty of keeping them clean, 833-91.
 Bombay houses: Practically no light, 851.
 Bombay: Kamatipura, 70 per cent. of houses insanitary, 972.
 Calcutta bustees more airy than Bombay chawls, 7439.
 Calcutta: Bustees dreadfully insanitary, 7632.
 Calcutta: Bustee houses very difficult to disinfect, 7689-91.
 Calcutta: Construction of bustees, 7708.
 Calcutta: Housing conditions, 6861.
 Dharwar houses: No light, 1711, 2307.
 Dharwar: Houses of the agriculturists in the villages are very dirty, ill-ventilated, and dark, 23,518.
 Dharwar: Style of houses one-storied with bamboo roofs laid on beams covered with earth easily opened up, 23,175.
 Dharwar: Ventilation and light very bad, 23,185.

Housing—cont.

Hardwar: Houses well built, well ventilated, and not overcrowded, 9005-7.
 Hinganghat: No light or air in houses, 6249.
 Hubli: Except for ventilation, houses excellent for an Indian City, 20,144, 20,207-10.
 Hyderabad: Houses badly lighted and ventilated, 5446.
 Kankhal: Houses very large and sparsely occupied, except on the occasion of the Kumbh fair, 9013.
 Karachi: Houses in old town very bad, 11,080-6, 11,971, 12,456-63, 22,649.
 Kumaun: Sleeping rooms, for warmth, just over cattle stalls, and also used as store-room for grain, some of which is gathered wet, II. 354, 360.
 Nasik: Description of houses, 13,786-8, 16,980-4.
 Panjab: Description of houses, 10,370.
 Surat: Houses of Ganchis very dirty; Sunars fairly clean, 2048.

Housing of Cattle:

All villagers inclined to keep cattle and manure close to their houses, 7922.
 Baroda: Cattle and men live all under same roof, 15,193.
 Cattle in one enclosure with living rooms at Pali, 6423.
 Cows kept in filthy state in Kumaun dwelling-houses, 6163.
 Cutch Mandvi: Cattle kept by the people of, in the lower rooms of the houses, 13,353.
 Dharwar district: Kept in the dwelling-houses in all the villages in the, 23,180, 23,431, 23,518.
 Housing of cattle in human dwellings a confirmed habit which cannot be altered, 7922.

Improvements in Housing:

Bangalore: Scheme for improving housing and rebuilding part of city, 3261, 3481.
 Bombay: Houses marked unfit for human habitation and removed; number removed, 25,666.
 Bombay: Improvements effected in respect of insanitary houses, 946-71.
 Bombay Municipal Act is likely to improve the housing, 869.
 Bombay: Re-building of houses proposed by Bombay Government at cost of four crores, 1101.
 Bombay: Re-housing cannot be carried out at once, 965.
 Improvements required in conditions prevailing within the houses, 8066.
 Intended to destroy the worst houses, but this was found impossible, 26,682.
 Poona: A considerable number of bad houses demolished, 21,290.
 To secure light and air in houses, the whole of India would require to be rebuilt, 8067.

No Relation between bad Housing and Prevalence of Plague:

Bombay: Mandvi quarter, houses where plague broke out first roomy and airy, 19,437.
 Bombay: Plague, though often found in insanitary houses, severe in many sanitary houses in Mandvi, 17,691.
 Bombay: Plague infected houses in Mandvi, many of them good, 19,437.
 Bombay: Several cases at Mandvi in well-lighted and well-aired rooms, 1512.
 Calcutta: Bustee houses expected to be the scourge of the place have been its salvation, 7443.
 Calcutta: Some cases in good houses; disease appearing in good or bad houses wherever the contagium morbi was carried, 6659-60.
 Habitation and surroundings not the exclusive factors in giving immunity from plague, 6070.
 Incidence of plague does not vary with character of house, 6285.
 Poona: Infection for a time raged very high in houses on raised platforms with plenty of air and light, 21,583, 21,608-11.

HOUSING—*cont.*

Sholapur: Cases equally frequent in bad and better class houses, 23,959-62.

Relation between bad Housing and Prevalence of Plague:

Ahmedabad: Considerable difference between the houses in the chief plague-infected areas and the other areas, 13,975, 13,978, 13,980, 13,985.

Baluchistan: Unfit houses pulled down, plague does not come, 8096.

Bombay: Bad housing responsible for plague remaining, 8273.

Bombay: Plague occurred in bad houses; no plague in good houses, 26,638, 26,672-4.

Calcutta: Incidence of attacks in dwellings at, I. 4474.

Dharwar: Plague in bad houses, while well ventilated houses escaped, 2307-9.

Karachi: Really good houses in the worst infected parts of the city remained free, 22,649.

Karachi: The wretched construction of the houses in the market quarter, and their insanitary condition, enabled rats to spread the disease, 22,649.

Most cases where sleeping rooms badly lighted and ventilated, 19,515.

Nasik: Plague cases chiefly in dark, dirty, and badly ventilated, and overcrowded houses, 24,524.

Nasik: Plague not worst in worst quarters, but houses in which cases occurred generally defective in lighting, ventilation, or overcrowding, 16,971-86.

Plague chiefly in low, damp, dirty, and ill-ventilated habitations, 11,848.

Plague very common in houses with no light and air, 2784.

Poona: Bad houses most exposed to attack, 21,505.

Poona: Sadashiv Pet: Particulars of houses affected, III. 157.

Poona: Well ventilated spacious houses escaped plague, 21,547.

Poona: The great mortality in certain parts of the city ascribed to the insanitary conditions of the houses, 12,880.

Rats die in well ventilated sanitary houses without plague following, 1147, 21,538.

Surat: Dirty houses attacked, 2048.

The poorest who live in damp, filthy localities are most susceptible to, 25,256.

Virulence and extension of disease dependent upon dirt, over-crowding and want of ventilation, 11,281.

Virulence of epidemic varies with badness of housing, 8298.

Worst cases of plague in ill-ventilated and overcrowded houses, 11,228.

See Air and light.

„ Overcrowding.

„ Sanitary conditions.

HUBLI:

Introduction and course of plague:

Attempt to confine plague to the chawls by a cordon failed, and first cases in town were those of persons who passed through the cordon from the chawls, 1583, 2407, 2436-8, 20,151.

Epidemic slight in beginning of 1898, and did not become severe till May, 1582, 1587, 20,168.

First epidemic in railway chawls, first case coming to notice on 15th October 1897, 1576, 2396-9, 19,971.

Infection said to have been first imported by persons who came with the disease from Sholapur, 2398.

Infection said to have been first imported by railway employes who had been to Poona and contracted the disease there, 20,141-2.

Plague attacks and death-rates, I. 412-6.

Plague may easily have been reimported in May 1898 by sick persons, or the infection already imported into the town may never have died out, 20,170.

HUBLI—*cont.*

Population at beginning of epidemic 57,000, 1570.

Statistics of attacks, deaths, and inoculation, 1598, 1615, 25,151.

Suggestion that the increase of plague in May 1898, after apparent cessation for a short period, was due to the reimportation of the infection in merchandise, 2413, 2441.

Woman who returned from Bombay in February 1897 developed plague, but disease did not spread, 2396.

Inoculation with Haffkine's prophylactic:

Both inoculated and uninoculated left the town, 3085.

Fifty-eight thousand and eighteen operations in 15 weeks I. 407.

History of inoculation at, 70.

Inoculations: Began on 11th May 1898, 1936.

Inoculations: Discrepancies in statistics, 3056-65.

Mortality from plague and other causes in inoculated and uninoculated, May to November 1897, 1819-24.

Report on inoculations at Hubli, I. 398-409

Statistics relating to inoculations, I. 65.

Statistics (corrected) relating to inoculation, 25,151.

Whole population inoculated in Hubli, except sick and aged, 1689.

See Census.

HYDROCHLORIC ACID:

Result of experiments, II. 8.

See Perchloride of mercury.

HYDROGEN:

Growth of Bacillus of Plague in:

Experiments on the growth of the plague microbe in air with admixture of hydrogen, 18,893.

Plague bacillus survives 5 days' desiccation in hydrogen, II. 8.

Isolation of Bacillus of Plague in:

Failure of attempt to isolate the plague bacillus from earth in an atmosphere of hydrogen, 26,387.

IDENTIFICATION OF BACILLUS OF PLAGUE.

See Isolation of bacillus of plague.

IDENTIFICATION OF INOCULATED PERSONS.

See Inoculation with Haffkine's plague prophylactic.

IMMUNITY FROM PLAGUE:

Classes of Persons alleged to be immune from Plague:

Alcohol consumers, III. 43.

Bhang consumers, III. 43.

Ganja smokers, III. 43.

Lepers, 917.

Opium eaters and smokers, III. 43.

Prostitutes, 917.

Syphilitic persons, 8693-4, 22,487, III. 43.

General Remarks regarding Immunity from Plague:

Immunity not racial, 19,448.

No such thing as complete immunity, 27,375.

Observation on immunity in different classes of people and castes during the present epidemic, 22,264-7.

See Europeans.

„ Inoculation of plague virus.

IMPORTATION OF CASES: *Instances in which Imported Cases were Numerous:*

A large number of importations or contacts are necessary in order to establish plague in a place, 16,000.

Ahmedabad: 77 plague cases (the majority bubonic) discovered at Ahmedabad Station among passengers from Bombay between October 5th, 1896, and February 16th, 1897, 13,886, 13,906, 13,908.

IMPORTATION OF CASES—*cont.*

- Ahmednagar: 1896, 26 imported cases and no spread of infection, 24,216, 24,225.
- Bhuj: Cases imported into, but no epidemic, 13,407.
- Cutch Mandvi: Local cases began in March 1897; up to end of February 1897, 47 imported cases detected, 13,360-2, 13,519, 13,760.
- Cutch Mandvi: 26 cases imported in January to April 1898 in period before second outbreak and when indigenous cases were very few, 13,411.
- Hyderabad (Sind): 34 or 35 imported cases before infection became local, 18,087.
- Mundra: 26 imported cases, with 17 indigenous cases, up to 6th June 1897; the main outbreak commenced later in August, 13,401.
- Nasik: 26 imported cases, mostly bubonic, before outbreak commenced, 14,705-11.
- Nasik: 35 cases of plague imported before disease became indigenous, 23,319.
- Poona: 63 cases imported by railway before indigenous cases occurred in first outbreak, 12,856-9-62.
- Poona: 30 imported and no indigenous cases between second and third outbreaks, 21,687-8.
- Rohri: 22 cases imported from Sukkar between February 22nd and April 17th, 1897, 12,021-5.
- Surat: Series of imported cases, 33 occurring before plague became indigenous, 15,556, 15,561-3.
- Surat: Between March 1898 and February 1899, 16 imported, and no indigenous, cases, 15,750.
- Wai: Notwithstanding influx of people from infected quarters, Wai remained entirely free from plague, 17,605.

INCUBATION PERIOD OF PLAGUE:

Arranged under the following subheads:

- Incubation Period in Cases of Plague contracted from direct Inoculation.
- Incubation Period in Cases that may be cited in connexion with the above.
- Incubation Period in First Cases on Introduction of Plague.
- Incubation period in Plague Cases contracted by direct infection from Rats.
- Incubation Period in Plague Cases contracted by Visits to Infected Places and Houses or contact with the Sick.
- Opinions regarding the Incubation Period.
- Plague Cases of exceptionally long alleged Incubation Periods.
- Plague Cases in Segregation Camps and Hospitals showing the Number of Days after Admission on which they developed.

Incubation Period in Cases of Plague contracted from direct Inoculation.

- A compounder at Hubli was bitten on the thumb by a pneumonic patient and fell ill 3½ or 4 days after, 4567.
- A Dome died 48 hours after assisting at a post mortem, 6921.
- A Dome who assisted Major Gifford in the post mortem last-mentioned, died of plague; his relatives said he was taken ill 3 days after the post mortem, 6503-6.
- A medical student who assisted at a post mortem, and made smear preparations, got plague 14 days after. Between the post mortem and his illness he worked regularly in the laboratory with plague material, the usual laboratory precautions against infection being taken, 6888, 6927-32.
- A man who assisted at a plague post mortem on 3rd June is said to have injured his hand. Major Green was informed on 8th June that he was ill of plague, and had had fever for 2 days, 6894 (7220, D 28).
- A student in the Jansetjee Hospital was assisting in the post mortem of a case of plague, and he pricked himself in the left thumb, a very slight prick, which he did not notice at the time. About 3 days afterwards, he got a bubo in the corresponding left axilla and died of plague, 1411.
- At the post mortem of first discovered case of plague in Calcutta, on 17th April 1898, at 8 a.m., Badri Dome scratched his hand. At noon on 19th he was found to have fever, and plague declared itself, 6462, 6493.

INCUBATION PERIOD OF PLAGUE—*cont.*

- Dome, who assisted at post mortem, and did so on 27th and 29th April, and 1st May, on last date got a scratch; fever was noticed in the evening of the 2nd, and the man died of plague on the 3rd, 6923-5, 6988-95.
 - Dr. Sticker, of the German Plague Commission, had several times cut or otherwise wounded his left hand without any evil consequences at post mortems made during the second week in March 1898. On March 26, he performed three post mortems, and one at 3 p.m. on March 29th, without wounding himself. At 6 p.m. on the 29th, on drying his hand after a bath, he noticed over the metacarpopharyngeal articulation of the right thumb a small, slightly painful, vesicle. This received a blow the same evening, and the arm at once became painful and plague developed, the bacilli of plague being recovered afterwards from the vesicle, 4562-9.
 - During post mortem on pneumonic corpse, a Hospital Assistant pricked a finger of his left hand at 3 p.m. on March 14. On the evening of the 16th he felt ill, and plague set in, 7218.
 - On October 7th 1897, an imported case of plague died at Poona; on Thursday Major Gifford made a post mortem; on Sunday Major Gifford felt unwell, on Monday he had to go to bed, and went through an attack of plague, 6496, 6502.
 - On 17th January 1898, Hospital Assistant got scratch on back of right hand at post mortem of pneumonic patient; plague manifested itself in 36 hours, fever setting in on afternoon of January 19th, 9393, 9566.
 - On 21st December 1897, about 5 p.m., Captain Leumann scratched himself at a post mortem. On 24th December he had a feeling of malaise all day; in the evening suffered from a sort of mental aberration; got fever, and an enlargement of glands in the armpit, on the same side as the scratch, and then went through a slight attack of plague, 4542-55.
 - Sputum was accidentally introduced into the eye of a nurse in Parel Hospital on the 15th February. On 18th feverishness set in, and next day the plague symptoms were marked, 7213-5.
- Incubation Period in Cases that may be cited in connexion with the above:*
- A nurse at Poona who was attending on pneumonic patient died of pneumonic plague, as proved by bacterial examination of her sputum. She had not been long in attendance on the patient, perhaps 2 or 3 days, 7576.
 - A patient came to hospital and was there two days till he died. A friend came from an uninfected place to nurse him while in hospital. She fell ill of plague three days after the death. Other similar cases noted, 4316-9, 4323-5.
 - A phthisis patient in the police ward of the Civil Hospital, Karachi, who had been in since 12th January, got a sudden rise of temperature on 6th February and developed plague. A case admitted on 1st February probably infected him, that case having developed buboes and died on the 4th, 12,387.
 - Man got plague and was in hospital from 31st March to 9th April, when he died with secondary pneumonia. His brother went to hospital to nurse him, and developed plague on the 13th, 13,003-15.
 - Policeman A. died of plague of the pneumonic form in the lines on 18th April. On 26th April Policeman B. got a wound on his right foot at noon, was admitted to hospital that night, and developed plague next morning, 12,380.
- Incubation Period in First Cases on Introduction of Plague:*
- A man went to Guntakal when it was infected. The day after his return home his daughter sickened of plague; she died the following day. The man was well until her death, but he died of plague shortly after. Infection

INCUBATION PERIOD OF PLAGUE—*cont.*

- could have been communicated to the girl only through her father, 4481.
- In Kelwa 5 days after the arrival of people from Bombay, who stayed 3 days, plague broke out among men, rats having died before, 23,207.
- In Kersova a case was imported on 30th, proving fatal on 31st January. The school-master who lived in the Talati's house visited the patient, and on 2nd February the Talati's nephew sickened, 23,207.
- People from Bombay stopped 3 days in Ahmedabad; 3 days after they left plague occurred among the people with whom they had stayed, 15,202.
- The first case in Shriguppi was a member of the family of a man who went to an infected place. This case was attacked about 4—not more—days after the man's return. The man himself suffered later, 2107-14.
- The first imported case at Bangalore Civil and Military Station was taken ill on his return on 12th August after 3 or 4 days in Hubli, 2538.
- Two servants belonging to Banniahs in Shurafi and Reri went to the Joria Bazar on 16th May and returned on the 19th; one got plague on the 21st in Reri and the other on the 23rd in Sharafi; 4 of their masters, probably infected by them, got plague on 24th May, 12,446.

Incubation Period in Plague Cases contracted by Direct Infection from Rats :

- A listless rat was found on the 5th March, and 8 days after a servant boy, who is said to have killed and burnt a rat, was attacked with plague, 17,996.
- An imported case, Khandwa, developed plague 25th October, and died 29th. Dead rats found on 30th and 31st October. Boy, who was playing outside the verandah of the room where the man died, and must have been infected from the first case by the rats, attacked 2nd November, 5958.
- A woman got a dead rat on her hand in taking out rice, and next day she got plague, 19,023.
- Fitter in Karachi who played with a rat got plague three days after, 11,418.
- Four cases in Customs' Lines after finding of dead rats and pending removal to huts, and no cases after, 11,976.
- In Areh dead rats were found on 1st and 2nd October in 2 houses; on 3rd October plague broke out in both houses, and those adjoining, 22,223.
- In Bhiwandi plague broke out in a house 7 days after dead rats were found there, 22,223.
- In Jegapur 2 or 3 days after a man returned from Dharwar rats died, and 3 days after his daughter was attacked, 23,207.
- New Kurla: Dead rats found 4th April; plague occurred 8th, 23,207.
- On the fourth day after dead rats were found in the Karad Post Office the postmaster's daughter was attacked, 14,363.
- On 19th November rats were found in a house; one old lady threw them away; other rats were found on the 24th; on the 29th the old lady got plague, 1180.
- Pali: Dead rats found 6th or 7th January; plague occurred 13th, 23,210.
- Santa Cruz: Dead rats found 12th February; plague occurred 15th, 23,207.

Incubation Period in Plague Cases contracted by Visits to Infected Places and Houses or contact with the Sick :

- A compounder attacked with plague on May 4th was probably infected on the previous evening by a visit to a non-disinfected house where he went to get an article, 10,588-91.
- A disinfected family that re-occupied a disinfected house had four cases of plague (including one death) within five days of re-occupation, 11,271.

INCUBATION PERIOD OF PLAGUE—*cont.*

- After evacuation had stopped the plague in Pademal, people were, on 29th June, allowed to re-visit their houses for disinfection, and on 4th July cases began again, 22,737.
- After the people of Trimbak in camp were perfectly free, 2 cases suddenly occurred; the patients had gone in the previous evening to an infected temple to get grain, 13,814.
- Andumbar: Three cases of plague occurred the same day or the next day among people who had re-visited their houses for disinfection, 22,732.
- An infected room was left vacant till 15th April. A man then went to live in it, and got plague on 18th, and later on, on 14th May, another man, who had used the place for cooking for 2 or 3 days only, got plague there, 11,266.
- A man who assisted in carrying a plague corpse got plague 4 days after, 19,038.
- A prostitute who about 23rd April re-occupied a disinfected house getting plague 4 days later, 11,276.
- Chak Kalal: Series of cases on occupying infected houses, 10,109-10, 10,189, 10,603.
- In Bada, after 17 days freedom, people were allowed in for 4 days on occurrence of rain; immediately they came out again there were 4 cases. Same happened in Salaya, 13,456.
- In Hinganghat from 26th November to 1st December there was little plague, only one attack. On 2nd December plague started again with 6 cases. On the 28th people were prematurely allowed to re-visit their shops; they did so on 29th November, and this led to the cases of 2nd December, 6006-11, 6024.
- In Joo people left their houses for some time on dead rats being found, but returned prematurely: three days after their return plague appeared among them, 23,216.
- In 2 cases men from Kankhal who went to Jawalapur to see after the disinfection of their houses got plague in 3 or 4 days after, 9226.
- Mahlgahla: Cases after occupying infected houses, 10,348.
- On 20th April a disinfected and vacated house was re-occupied; plague occurred there again on 24th, 11,276.
- Poona: European editor of paper went out with a search party the first day such parties went out. He lived in an uninfected part, and was not otherwise in contact with plague. The same day he developed the disease, 12,883-8.
- Succession of cases connected with the Backergunge epidemic, 6835-9, 7350-94, 7409-13.

Opinions regarding the Incubation Period :

- About a week, 3375-6.
- About 8 days, 13,016.
- Appears to be from 2 to 10 days, 45.
- Eight to 10 days, 1899.
- Five to 10 days, 4457.
- From 3 to 5 days. Longer periods mostly mild cases, 25,485.
- Incubation period from 2 to 4 days, 8640.
- Majority of cases in camp developed in 48 hours after admission, 17,368.
- May extend to 15 days, 3139.
- Most difficult to ascertain period of incubation when the infection is through clothing, 8640, 13,023.
- Ordinarily from 24 hours to a week, 3375-6.
- Over 10 days, 1903.
- Period of incubation from less than one day to 10 days, 10,407-12.
- Period certainly up to 10 days, 10,196.
- Period in some cases under 2 days, 1198.
- Some cases have incubation period over 10 days, 12,505.
- Ten days a liberal allowance, probably shorter, 1619, 1796, 2833.
- Usual period 4 or 5, extending to 10 days, 226.
- Varies from 1 to 8 days, I. 351.
- Varies from 36 hours to 10 days, I. 399.

INCUBATION PERIOD OF PLAGUE—cont.

Plague Cases of exceptionally long alleged Incubation Periods :

- Cases in which incubation period was beyond 10 days, II. 184.
 Dharwar: Contacts got plague up to 18 days, 1902.
 Details of cases in plague hospital, Baroda, in which the period of incubation appeared to be more than 10 days, II. 285-6.
 On 3.12.96, a Parsee child arrived in Poona from the Fort, Bombay, where there was plague. She got plague 14 days after, on 17th December. There were suspicious cases in Poona City, but the child had not access to the city, 12,889-92; 21,658-63.
 Statement of a number of cases that occurred more than 10 days after removal to segregation, as proof of a period of more than 10 days but these cases may have been due to a surreptitious visit to an infected house, 22,230, 22,414-22, 22,456-80.
 Statement of 7 cases said to have a period of over 10 days; the histories are not detailed enough to show exact source of infection and exact length of period, 15,293.
 Syce who came from Bombay to Baroda 5 weeks before was attacked by plague, 15,187.
 Ten days after wearing a pair of shoes that gave her a sore on her heel the day she wore them, a Parsee lady developed plague. She lived in a non-infected quarter, 20,658.
 Woman develops plague on 10th day at Bandra, 8240.

Plague Cases in Segregation Camps and Hospitals showing the Number of Days after Admission on which they developed :

- Anand, 14,182, 1291.
 Anand detention camp, one case on the 11th day, 14,138.
 Ankleshwar, 14,215.
 Bangalore Civil and Military Station, 25,030.
 Bhusawal, 1,291.
 Bombay (Wari Bundar Camp), 301, 17,367, 20,442.
 Dharwar, 1,926.
 Gadag, 23,693.
 In Kalankot and Gharibabad, evacuation stopped plague 8 days and 2 days after evacuation, 11,145-6, 11,163-6.
 Poona: 1st and 2nd epidemics, 21,835.
 Poona: 3rd epidemic (to March), 25,827.
 Porbandar, 13,722,
 Porbandar: Dates of developing plague after arrival in observation camps, ordinary period not more than 9 days, 13,662, 13,744-7.
 When two members of a family were attacked the other members were segregated; one of the persons segregated developed plague 9 days after segregation, 4320.
 See Inoculation with Haffkine's plague prophylactic: *Effect on incubating plague.*

INFECTED PLACES; *Miscellaneous particulars regarding :*

- Ahmedabad: Bombay, plague introduced from into, 13,855.
 Ahmedabad: First plague cases among the mill hands occupying a dehla outside the Sarangpur gate, 13,918.
 Ahmedabad: Table showing number of plague cases, imported and indigenous, from October 1896 to April 1898, II. 228.
 Ahmednagar Cantonment: First case in September 1897, 24,136.
 Ahmednagar City: First cases in, October 1897, evacuated November 1897, 2, 24,237.
 Ahmednagar City: Four hundred and seven cases and 315 deaths from October 1897 to March 1898, 24,238-9.
 Ahmednagar City: Plague travelled in a line from house to house and ward to ward, 24,234.
 Alibag: Latest outbreak among Brahmans, former among the Kolis, 17,621.
 Ankleshwar; Population, 10,700: First cases among the Ganchis in April 1898, 14,205-6.
 Ankleshwar: Table showing monthly mortality from April to November for the years 1896, 1897, and 1898, II. 247a.

INFECTED PLACES—cont.

- Ankleshwar: Table showing weekly attacks and deaths from plague in 1898, 14,214.
 Ankleshwar Taluka: Table of weekly attacks and deaths in the villages during the year 1898, II. 239.
 Backergunge: Epidemic at, 6836-43, 7331-475.
 Backergunge: Plague bacillus not found in sputum of pneumonic patient at, as examination could not be made in time, 7471-4.
 Bantwa: Population 8,500; Epidemics August and September 1898, deaths 602 in 944 cases, 17,548-55.
 Baroda Cantonments: Table of deaths from causes other than plague, from August to December, 1898, II. 289.
 Baroda City: First outbreak began April 1897, second began October 1897 and ended April 1898, 14,584, 14,596, 14,628.
 Baroda City: Population 112,500, 14,582.
 Baroda City: Table of mortality from plague and other causes, January 1897 to January 1899, 14,983.
 Baroda City: Influx of people to Baroda from infected places, especially Surat, 14,599.
 Baroda City: Table of gross mortality three months before outbreak, II. 274.
 Baroda City: Table of weekly gross mortality from plague and all other causes, II. 274.
 Baroda City: Table showing progress of plague from January 2nd to April 9th, 1898, II. 287.
 Baroda City: Table showing weekly number of plague cases from October 1897 to January 1899, II. 253.
 Baroda City: Table showing weekly returns of mortality from October 1897 to January 1899, II. 252.
 Baroda State: Dhamdadhha: first epidemic among the Kolis and Pattidars; the second epidemic began among the Kolis, 15,120.
 Baroda State: Ratio of number of attacks to population in the several divisions, II. 283.
 Baroda State: Table showing ratio per 1,000 inhabitants of plague deaths in different villages, II. 282.
 Baroda State villages: Statistics regarding the plague outbreaks and inoculations, 14,793-4, 14,834-981, II. 496, 502, II. 503-21.
 Belgaum: Account of the introduction of plague in Belgaum, 23,028, 23,031.
 Belgaum: First epidemic October 1897 to June 1898, 23,124.
 Belgaum: Plague began among the Muhammadan Kolis, 1715.
 Belgaum: Population about 28,000; 23,122.
 Belgaum: Second epidemic began July 1898, 23,125.
 Belgaum: Sweepers first infected in Belgaum, 2086.
 Belgaum: Table showing number of plague cases from October 1897 to end of January 1899, III. 210.
 Bhiwandi: Plague epidemic from May to September 1898, 22,111-3.
 Bhiwandi: Population 15,000, 22,108.
 Bhiwandi: Table showing attacks and deaths from plague, 14,482.
 Bombay Presidency: Deaths from plague, 61,915 from May 27 to November 25, 1898, 3.
 Bombay Presidency: Deaths from plague to May 1897, 28,737; to May 1898, 61,219; and in 1898-9, to 3rd March, 94,000, 26,536-7.
 Bombay Presidency: One-half of the plague mortality in Bombay Presidency occurred in the districts of Dharwar and Belgaum, 26,537.
 Bombay Presidency: 94,000 deaths from plague in the Presidency during the first three epidemics, 26,536.
 Broach: Infected in September 1898, arrangements made, 15,484.
 Broach: Lower classes and Banniahs suffered most, 15,470.
 Bulsar: First epidemic in early part (February) of 1897, 19,940.
 Bulsar: Plague probably did not spread from Dhebras to Tais in Bulsar, 16,179.
 Bulsar: Second epidemic began in April 1898, 16,159.
 Catch Mandvi: Account of the outbreak at Rawapur in 1897, 13,364.

INFECTED PLACES—*cont.*

Cutch Mandvi: First cases, probably about February 1897; most virulent, 455.
 Cutch Mandvi: First epidemic, 4,298 cases, with 4,224 deaths, 13,384-5.
 Cutch Mandvi: First imported cases in October 1896, 13,358.
 Cutch Mandvi: History of cases among the Megwals, 13,408-10.
 Cutch Mandvi: History of former epidemics, 13,356.
 Cutch Mandvi: Khattris suffered most during first outbreak at Mandvi, 13,417.
 Cutch Mandvi: No cases among the Waghris, who live in grass huts outside Mandvi, 13,480.
 Cutch Mandvi: Not visited by plague since 1817 until now, 13,351.
 Cutch-Mandvi: Particulars of deaths from causes other than plague from February 20th to March 9th, 1898, II. 218-9.
 Cutch Mandvi: Report of an outbreak of disease in Cutch Mandvi, II. 405-8.
 Cutch Mandvi: Salaya: Two hundred and thirty-three cases and 176 deaths during the second epidemic, 13,433.
 Cutch Mandvi: Second epidemic from March 1898 to January 1899, 992 cases and 748 deaths, 13,412.
 Cutch Mandvi: Second epidemic severe from March to end of May 1898, with 288 cases and 202 deaths, 13,411.
 Cutch Mandvi: Severe epidemic of fever in 1878, 13,357.
 Cutch Mandvi: The town being a mile square contained 40,000 people before the outbreak, 540.
 Dharwar district: Attacks and deaths, I. 72.
 Dharwar district: Plague introduced into the villages from Habli, 23,499.
 Dharwar district: Statement of attacks and deaths, I. 72.
 Dharwar district: Statement of the course of the epidemic in Byahatti, 2192.
 Dharwar district: Statistics of very severe plague in certain villages in which measures could not be properly carried out, 1601, 1719, I. 92-3, 23,518.
 Dharwar Jail: Plague in, 2227-303.
 Dharwar Town: Measures applied to plague infected houses, 1610, 1943-5, 2328-37, 23,747.
 Dharwar Town: Plague began among the Muhammadan Kolis, 1715.
 Dharwar Town: Population 32,000 at census, 38,325 in August 1898, 1571, I. 67.
 Dharwar Town: Statistics of attacks, deaths, and inoculations from middle October 1898 to middle December 1898, 1603, 25,151.
 Guntakal: Course of infection around, 5039-47.
 Hinganghat: Daily mortality, 6096.
 Hinganghat: In spite of precautions taken, plague imported, and escaped detection till November 19, 1898, when it had been some time in the town, 5948-59, 5977, 5980, 6001, 6083-8, 6,200, 6289, 6395-9.
 Hinganghat: Plague mortality, 6197.
 Hinganghat: Suggestion that plague was introduced by two mill hands from Bombay who came to the town, but did not themselves develop plague, 6200, 6240-7, 6293.
 Hinganghat: Table of death-rate, 6,200.
 Hyderabad (Sind): Population 65,000; slight increase by arrivals from Karachi before plague broke out; no great decrease after plague broke out, 18,114-7.
 Hyderabad State: Plague imported from Sholapur, and first cases in January 1898; measures adopted, 5,153.
 Hyderabad State: Statistics of plague in villages of, I. 194-6.
 Igatpuri: Statement of course of plague for 1897, III. 219.
 Igatpuri: Table of plague cases and deaths, III. 90.
 Ilkal: Table of plague cases and deaths, III. 90.
 Kaira district: No direct evidence to show how plague was introduced in the, 14,025.
 Khandraoni: Gwalior State: List of persons attacked with plague in 1897, II. 71.
 Kotri: First case in second outbreak a Hindustani, plague then spread to Banniahs and Muhammadans, 12,597.

INFECTED PLACES—*cont.*

Kotri: First imported case, January 24, 1897; last March 26, 12,532.
 Kotri: Table of deaths from all causes during September and October 1897, II. 452-4.
 Kotri: Table of particulars regarding the first 20 cases in the second outbreak, II. 182-3.
 Kotri: Table showing total mortality during January, February, and March, 1897, and average mortality during the same month for five years, 12,556.
 Kotri: Table showing weekly death-rate from April, 1897, to end of January, 1898, II. 182.
 Madras City: Though no plague about end of 1898, death-rate abnormally high, 3904.
 Madras Presidency: Infection first appeared about August 1898 in the Anantapur district, 3882-93, 4101-19.
 Mysore City: First infected on 2nd October 1898; measures adopted, 3202-481.
 Mysore City: Statistics of incidence of plague, III. 274-5.
 Mysore State: Dates of first spread of plague in villages, 3302.
 Nasik: A great centre of pilgrimage, 13,751.
 Nasik: Epidemic ceased end of March 1898; 450 cases in all, 16,837, 16,946.
 Nasik: First case a Muhammadan dealer in rice, 13,756.
 Nasik: First cases, October 1897, 2, 16,920, 16,966.
 Nasik: First indigenous case among the permanent population, 13,753.
 Nasik: Permanent population of Nasik between 25,000 and 26,000, 13,752.
 Nasik: Plague introduced from Bombay, 18,068.
 Nasik: Plague supposed to be introduced from Ghoti, which had been infected from Bombay, 13,756.
 Nasik: Table showing number of plague cases from November 12th, 1897, to April 8th, 1898, II. 2563.
 Nasik: Total mortality from February 3rd, 1897, to April 8th, 1898, 14,732.
 Palanpur: First outbreak February to May 1897, 141 cases and 90 deaths, 13,051-3, 13,859.
 Palanpur: Second epidemic August 1897 to January 1898, 13,057, 13,060, 13,095.
 Palanpur: Second epidemic, 674 cases and 413 deaths, 13,101.
 Palanpur State: Dates and particulars of outbreaks in all places infected in 1897-8, 13,159.
 Palanpur State: List of villages, population, date of first case, evacuation, &c., II. 199, 200.
 Panjab: Jullundur district: Table of mortality, II. 96.
 Panjab: Khatkur Kalan first village attacked; plague detected October 1897, 9917-30.
 Panjab: Measures taken on appearance of plague, 9934.
 Panjab: Rahon: No data to prove how Rahon was infected, 10,534, 10,553.
 Panjab: Table of statistics in reference to the plague at Sotran, Lidhar Kalan, Khanpur, Bika, Punian, Gosal, and Kariam, II. 107-10.
 Panjab: Table of summary information concerning the plague-infected villages, II. 404-7.
 Panjab: Table showing mortality in villages according to their population, II. 94-95.
 Poona Cantonment: First infected June 1897, 21,193.
 Poona Cantonment: Infection spread from Kirki and became epidemic in August 1897, 21,206-8, 21,247-8.
 Poona Cantonment: Last case December 1897, 21,221.
 Poona Cantonment: Measures adopted and organisation, 21,259.
 Poona Cantonment: Two hundred and ninety-eight deaths in 1897 epidemic, 21,316.
 Poona City: During first outbreak only eastern part affected, and during the second only the western, 21,533.
 Poona City: First case December 1896; second epidemic, August 1897, 2.
 Poona City: First epidemic December 1896 to May 1897, 21,674, 21,679.
 Poona City: Second epidemic commenced August 1887, ended February 1898, with 4614 cases and 3633 deaths, 21,631-5.
 Poona City: Statement of attacks and deaths from plague recorded from February 14th to March 17th, 1899, III. 318.

INFECTED PLACES—*cont.*

- Poona City: Statement of figures of normal and actual mortality from February 14th to March 17th, during the years 1897 to 1898, III. 318.
- Poona District: Poona collectorate death-rate rose suddenly in one month, just before outbreak in Bombay, by 1,000, 905.
- Porbandar: First cases among the Kharwas 13,665.
- Porbandar: Plague spread from the Kharwa quarter to that of the Bhois and Borahs, 13,680.
- Porbandar: Plague spread from the Kharwas to the Muhammadans, the Turias, the Julahas, the Sepoys, and Memons, 13,705.
- Porbandar: Statistics of plague for 1898, II. 483-5.
- Rohri: Course of epidemic impossible to trace at, 12,096.
- Rohri: One hundred and fifty-one cases and 92 deaths, 12,043-4.
- Rohri: Outbreak of plague in the suburbs, 12,078.
- Rohri: Plague appeared in March 1897, 12,024.
- Satara: District plague returns 1897-99, III. 181-191.
- Satara: History of epidemic, 22,093.
- Sholapur: Epidemic started among the servants of the Europeans, 23,893.
- Sholapur: Infected in October 1897, 2, 20,225, 23,888.
- Sholapur: List of weekly number of attacks and deaths, II. 242.
- Sirohi State: Table of cases, 9886, II. 75.
- Sukkur: First case in February 1897, 3723.
- Surat: First epidemic, 49 imported and 65 indigenous cases, 15,626.
- Surat: First epidemic lasted from February to May 1897, 24,378.
- Surat: First imported cases, December 8th, 1896, 15,556.
- Surat: Plague begins February 1897. Second epidemic in August, 2, 15,856.
- Surat: Plague imported from Bombay, 16,053.
- Surat: Sudden outbreak of cholera and plague in jail, 15,789.
- Surat: Table of number of cases during the first epidemic, II. 295.
- Surat: Table showing total mortality between the two epidemics, II. 302.
- Surat: Table of weekly mortality from December 1st, 1896, to May 31st, 1898, II. 298.
- Surat: Total of cases and deaths during first and second epidemics, 15,728.
- Table showing plague cases and deaths at several large places, II. 258b.
- Umreth: First case in the Kaira district occurred at, 14,014, 14,019.
- Umreth: First detected cases in the Gola quarter, 14,027.
- Umreth: Plague officially declared on September 26th, 1898, 14,020.
- Umreth: Table of weekly attacks and deaths, II. 232.
- Wardha: First cases on 5th December 1898, 6212.
- Wardha: Statistical table of mortality and course of plague, 6197, I. 224.
- See Bangalore.
- „ Bombay.
- „ Calcutta.
- „ Daman.
- „ Hubli.
- „ Karachi.
- „ Kirki.
- „ Lanauli.
- „ North-West Provinces.
- „ Undhera.

INFECTION BY LOCALITY.

- Both pneumonic and bubonic plague are infectious in the houses in which the disease exists, 10,227-9.
- Danger lessens with distance from centre of infection, 26,537.
- Disease is intensely local in floors, 23,245-8, 23,285.
- Disease spreads rather to neighbouring houses than by human agency, 13,698.
- Houses do not seem to be themselves infective, 16,004.
- Infection appeared to be in the ground and local at Hubli, 1645.

INFECTION BY LOCALITY—*cont.*

- Infection not from person, but from locality, 1947.
- Localisation of epidemic well marked in several areas, 26,537.
- Locality seems to be infected, 9275.
- Person to person infection rare; locality the cause of infection, 18,146.
- Plague a disease of locality, 1650, 18,108.
- Plague poison mostly located in the houses, 17,727.
- Plague generally extends by continuity of dwellings, 22,067.
- Residence in an affected area communicates the contagion, 21,537.
- See Incubation Period: *Incubation period in cases contracted by visits to infected places or houses or contact with the sick.*
- „ Floors.
- „ Recurrence of plague in infected towns and villages.
- „ Recurrence of plague in the same house or locality.

INFECTION, MODES OF:

By Lesion of the Skin:

- Bacillus enters body through open sores, 20,386.
- Bacillus introduced into the body by fissures in the skin, 16,068.
- Bacillus produces plague through infection of the distal lymphatics, 20,385.
- In bubonic cases the virus enters the system through lesions in lymphatic connexion with the particular set of glands affected, 17,367.
- Infection of bubonic plague through abrasions, 12,359, 17,775, 18,174.
- Infection most frequent through the skin, 7076, 20,586.
- Infection by skin far commoner than supposed, I. 350.
- Infection probably by lesions of the skin in some instances, 1391, 7076.
- Infection possible by scratch or cut, 338.
- Infection through wounds and cracks in the skin, 15,275, 16,007, 16,068, 18,048, 18,051, 18,113, III. 42, 18,177, 18,506, 19,965, 20,386.
- Plague bacillus found in small lesion near bubo in four cases, I. 374, 1393.
- Report of cases in which the virus had been introduced through abrasions of the skin, 12,875, 6908-10, 7302.
- Seventy-five per cent. of plague cases contracted through local lesions, 11,579.
- Skin of the Feet: Disease contracted through abrasions of the toes, 1003.
- Skin of the Feet: Frequent cracks on native feet make infection through the skin probable, 534.
- Skin of the Feet: Point of infection generally in lower extremity, 2374.
- Skin of the Feet: Sweepers infected through the skin of the feet, I. 442.
- Skin of the Feet: Through the abrasions in skin of the feet, I. 351, 1781.
- See Incubation period: *Incubation period in cases of plague contracted from direct inoculation.*
- „ Lesions.

By Means other than Lesions of Skin:

- Cutaneous inoculation not usual mode of dissemination, 221-37, 337, 347.
- Difficult to believe that all bubonic cases should be due to abrasions of the skin, 9389.
- Fissures in skin not so constant as to warrant any decided inference to their being the way of infection, 18,108.
- Infection through the skin improbable, 232.
- Introduction of plague through the skin a rare occurrence, 9383.
- Many other lesions by which plague might enter except the skin, 1505.
- Multiple buboes evidence against cutaneous inoculation, 347.
- No proof that skin is chief method of infection, 2728-9.

INFECTION, MODES OF—*cont.*

No lesions found in the skin of human beings or monkeys to account for the inoculation of disease, 9389.

Point of entrance in skin cannot be accurately indicated, 7211.

Very few cases confirmatory of inoculation through cuts and wounds, 22,360.

Infection through :

Alimentary canal: Possibly by alimentary canal, 7076.

Alimentary canal: Produces abdominal form of plague, very rare, 20,388, 22,325.

Alimentary canal: Through alimentary canal possible, 7211.

Eye: Infection entered through the conjunctiva in one case, 7211, 7215.

Eye: Infection by microbes entering the body through the corners of the eyes and nostrils, III. 42.

Eye: Infection through the mucous membrane of the eye, 20,530.

Lungs: Infection chiefly through inhalation, 22,360.

Lungs: Means of infection not external, but pulmonary, 222, 230, 332-9.

Mouth: Cervical buboes in children probably the result of auto-inoculation through the mucous membrane of the mouth, 11,581.

Mouth: Infection by inhalation; probably through abrasions in the mouth, 7211.

Nose: Instance in which the nasal mucous membrane was the absorbing surface of infection, 20,394.

Sexual intercourse: Cases probably due to, 21,293, 22,264.

Stomach: No post-mortem evidence that infection contracted through stomach, I. 368, I. 375.

Tonsil: In buboes of the neck local lesion generally found on the surface of the tonsil, 11,580.

Tonsil: Of cervical glands through the mucous membrane of the tonsils, 21,761.

See Lungs.

„ *Food.*

Opinions of certain Witnesses regarding Modes of Infection :

Opinion of Mr. Davur, III. 42.

Opinion of Mr. Dantra, III. 271.

Opinion of Mr. Ghadiali, III. 271.

Opinion of Mr. Muhammad Nivaz Shah, II. 123.

Opinion of Mr. Nowrosji Desai, II. 291.

See Boots.

„ *Carbuncles.*

„ *Floors.*

„ *Food.*

„ *Infection by locality.*

„ *Merchandise.*

„ *Pneumonic plague.*

„ *Rats.*

„ *Soil.*

„ *Sputum.*

„ *Stomach.*

INFECTIOUSNESS OF PLAGUE :

Infectiousness of Plague from Personal Contact :

Among monkeys: did not spread among monkeys confined in open cages at Hardwar, 8739-45.

At Jamalpur plague mostly communicated from person to person in families, 9165.

✓ Cases of infection by persons, 7243-60.

Cases of infection probably due to sexual intercourse with plague-infected persons, 21,293, 22,264.

Course of cases from person to person in Calcutta, 7509.

Course of cases from person to person in Surat, 16,045.

✓ From person to person infection rare, 18,146, 18,789.

✓ Infection not often communicated by touching plague patients, 22,354.

Infection in Kotri seemed to spread by contact of persons not from houses, 12,650.

Infection carried in Cutch chiefly by people, personal infection, 13,462.

INFECTIOUSNESS OF PLAGUE—*cont.*

Not infectious in the early stages, 1913.

Not a very infective disease, 26,714-7.

✓ Not very infectious or contagious, 12,376.

People observed hugging and kissing plague patients without getting infected, 25,229-31.

Plague cases in camps and hospitals do not spread infection to any important extent, 10,374.

Spread of plague from a single case not noted in Bombay, 1269-71.

Very little infection from person to person, 17,722-3, 21,500, 21,538, 21,569.

Instances in which Infection has been severe in individual Families or Houses :

In Calcutta in a family of 15, 8 succumbed to plague, and in another case 11 persons died in one hut, II. 537.

In Hubli 9 persons out of a family of 13 died before the existence of plague among them became known to the authorities, 23,383.

In one family eight deaths occurred and in one compound 13 deaths out of 18 people, 3698.

In one house in Karachi no less than 21 people among 35 to 40 inmates caught the plague from one another, 12,333-4, 12,479-80.

Instance of a family of 13 members (Mr. Shelke's) in which infection spread and 9 uninoculated members all died, 1725.

One case in Kajurgi, Hyderabad State, introduced the infection and started an outbreak, 9 or 11 persons dying in one family, 5498-506.

Three persons out of five infected in a week in a small room, 18,321-3.

When ventilation openings closed, 20 cases at once occurred in a fairly sanitary chawl, which, though in the middle of plague, had before remained free, 22,382.

See Bubonic plague.

„ *Infection by locality.*

„ *Pneumonic plague.*

„ *Septicæmic plague.*

INFORMERS :

Cutch Mandvi: Poor people giving information of cases paid small reward, 13,436.

Hyderabad State: Reward of 10 rupees offered for information of an infected village. System worked well, 5439-42.

In large places only possible methods of discovering plague are paid informers, &c., 10,963.

Karachi: Rewards paid for the reporting of plague cases, 13,436.

Panjab: Good results of the system of rewards for information of newly infected villages, 9934-6.

Panjab: 50 rupees paid to informer who first gave notice of newly infected village. System worked well, 9934-6, 10,826.

Panjab: Banga, system of reward for notification of plague very successful in, 10,249.

Panjab: Banga, people under the belief that the first case was imported for the sake of the reward, 10,235.

Sukkur: Small rewards paid to informers, 18,385-6.

Surat: System of rewards to private persons, Sanitary Inspectors and police for information, 15,575-9.

See Spies.

INFORMATION OF OCCURRENCE OF PLAGUE.

See Concealment of plague cases.

„ *Corpse inspection.*

„ *Discovery of plague cases.*

„ *House searches.*

„ *Informers.*

„ *Notification of plague.*

„ *Registration of deaths.*

„ *Spies.*

INOCULATION OF PLAGUE VIRUS :

Confers special local immunity as well as general, 194.

Doses of virus necessary to produce the initial reaction must be increased in order to produce the same reaction subsequently, 27,376.

Immunity conferred by inoculation with plague cultures, living and dead, 27,355-7.

INOCULATION OF PLAGUE VIRUS—*cont.**Animals:*

- Immunity—Local and general immunity in animals produced by repeated inoculations of plague virus, 115-7.
 Post-mortem appearances the same in animals partially protected by inoculation with plague virus and those dying without previous inoculation, 27,363.
 Sterilized cultures of plague bacilli have not given the satisfactory results obtained with microbes of cholera and typhoid, 27,358.

Test for Presence of Plague by:

- Method of testing for the presence of plague bacilli by inoculation of suspected substances into rats, an exceedingly sensitive method, 153.
 Method used by Dr. Gibson, 619-20.
 Not a good method, and gives doubtful results, 8522-4, 8583-9.

Test of Virulence of Plague by:

- Inoculation into the peritoneum a surer and quicker method for testing the virulence of the microbe than subcutaneous injection, 17,413.

See Experiments on animals.

- „ Inoculation with Haffkine's prophylactic.

INOCULATION WITH CURATIVE SERUM:

- See* Haffkine's curative serum.
 „ Lustig's curative serum.
 „ Yersin's curative serum.
 „ Serum.

INOCULATION WITH HAFFKINE'S FLUID.

Arranged under the following subheads:

- Adoption of Inoculation as a general Plague Measure.
 After Effects of Inoculation with Haffkine's Fluid.
 Age and Inoculation.
 Animals, Experiments on.
 Attitude of People towards Inoculation.
 Bars to Inoculation with Haffkine's Fluid.
 Caste, Religion, and Race; Inoculation with reference to.
 Certificates of Inoculation.
 Dosage.
 Duration of Protection afforded by Inoculation.
 Effects of Inoculation with Haffkine's Fluid—
 Attacks; on Plague—
 Clinical Symptoms of Plague; on—
 Incubating Plague; on—
 Mortality: on Plague—
 Other Diseases; on—
 Spread of Plague; on—
 Extensive Application of Inoculation: when resorted to and General Effects of.
 History of Inoculation in particular places.
 Identification of Bodies of Inoculated Persons.
 Inducements to Inoculation with Haffkine's Fluid.
 Investigation Sheets.
 Method of performing Inoculations.
 Period for which Protective Effect exerted.
 Persons recovered from Plague; Inoculation of.
 Reaction after Inoculation of Haffkine's Fluid.
 Re-inoculation.
 Registration of Inoculated Persons and Statistics regarding Inoculation.
 Standardisation of Dose.
 Strength of Haffkine's Fluid.
See also Haffkine's Plague Prophylactic, arranged under the following subheads:
 Character and preparation of Haffkine's fluid.
 Constituents of Haffkine's fluid.
 Re-sterilisation of Haffkine's fluid.
 Sterility of Haffkine's fluid.

ADOPTION OF INOCULATION AS A GENERAL PLAGUE MEASURE.

- Cannot be trusted alone to stamp out plague, 22,411.
 Prophylactic inoculations alone not sufficient to eradicate plague, 10,179.

INOCULATION WITH HAFFKINE'S FLUID—*cont.*

- Preventive inoculation is limited in its applicability, 21,741.
 People even if they admit its value will neglect it as they do small-pox vaccination, 7881.
 Can never prepare a district against invasion of plague, 3872.
 Impossible to rely on as chief measure, takes too long, 7882, 7988-90.
 Inoculation not an indispensable measure in combating plague, 15,432.
 Protective value proved, but it cannot replace sanitary measures, 274-5.
 Must be secondary to sanitary measures, I. 407.
 Inoculation combined with complete evacuation the ideal plague measures, 22,408.
 Partial inoculation of villages unadvisable, 1958.
 Not a plague policy in rural areas, 1858.
 Recommended with caution, III. 43.
 Segregation preferable to forcible inoculation, 7061.
 Facilities should always be before the people, 923.
 Inoculation stations, provision should be arranged for, 923.
 Should be done by Government officials, 1963.
 Essential for nurses and attendants, I. 383.
 Value in preventing interruption of trade, 1956, 23,680.
 Prevents panic and the scattering of the people, 3482, 18,430, 24,977-9.
 Bose, Dr., formerly an opponent, converted by results, 7542.
 Dinshah, Dr., thinks it had better be avoided, 24,935.
 Lawrie, Col., thinks in no way to be recommended, 5161.

AFTER EFFECTS OF INOCULATION WITH HAFFKINE'S FLUID:

- Differ in different persons, 4748, 10,711, 10,799-802.

Abscesses:

- Occur occasionally at point of, 4743, 4781, 11,705, 16,568.
 Due to defect in antiseptic precautions and neglect, 1753, 4781, 10,714.
 Ten in 2,500 cases, 1779; 2 abscesses, 1806; 8 in 27,000 cases, 1836; 12 in 75,000 cases, 3034.
 None noticed, 664, 14,519, 16,317.

Alcoholism: One death at Bangalore after inoculation due to, 4636.

Apoplexy: Death 1½ months after due to, 14,819.

Boils: Attributed by population to, I. 477.

Buboes:

- If resulting, appear near point of, 193, 1877, 2280-1.
 Have occurred, not near point of, 16,327.

Cellulitis: Of whole arm form seat of inoculation to wrist, 4853.

Chorea and Tetanus: In a child follow, 4774.

Collapse: In a girl follows, 11,707.

Consumption: Attributed to, 201, I. 340.

Deaths:

- Apparently due to inoculation fever, 4605, 4973, 2388.
 Death not due to, 4754, 6370.
 Death shortly after, 1820, 2763, 4605, 4763, 5074, 12,939, 14,092, 16,584, 19,106, 20,458.
 Death shortly after, in inoculated mostly occur in first few days after inoculation, 3185
 Plague bacillus found in 41 cases which died shortly after inoculation at Hubli, 3074.

Debility: General, caused by, 14,813-5.

Delirium follows: 2762, 6381-2, 16,592.

Depression: Great, caused by, 20,458.

Diarrhoea:

- Followed, 4742.
 Did not follow, 16,322.

Endocarditis: Death from, ascribed to, 20,458.

Erysipelas:

- No case known to M. Haffkine, due to, 204.
 Erysipelatous blush followed, 6302, 16,328.

Erythema: Followed, 5160.

Fainting: Followed, 4741.

INOCULATION WITH HAFFKINE'S FLUID—*cont.**Fever:*

- Continued, followed, 23,639.
- Course of in 826 cases, 10,863.
- High fever, cases of, 5160, 6387-8, 23,705.
- Apparently caused death of a boy after, 4605.
- Two cases die of simple fever, 5123.

Gastric Irritability: caused by, 20,458.

Headache: Caused by, 14,519.

Hydro-nephrosis: Woman suffering from, died after, 4763.

Induration: Near point of, 6319.

Impotence: Two cases alleged to be due to, 14,818.

Leprosy: Alleged, 19,314.

Leucoderma: Alleged, 19,314.

Malaria: Followed, 6361.

Neuralgic Pains:

None due to, 14,818.

Follow, 14,813.

Pains in Joints and Muscles: Follow on, 23,707.

Permanent evil Results: None, 202, 705, 1481, 2759, 4635, 10,154, 10,645, 10,698, 14,518, 16,278, 16,322, 19,051.

Phthisis: Attributed to, 205.

Pregnant Women:

Take inoculation well, 4869, 23,732.

Woman died at Guntakal after, 5074.

No reason to refrain from inoculating with modified dose, I. 400.

Of two inoculated, one miscarried and one did not, 23,733.

Rashes: Caused, 19,306-19,313.

Rheumatism: Caused by, 14,821.

Severe Symptoms from:

Case of severe reaction, 4012.

In Europeans, 5124-6.

In the case of Colonel McConaghy and an Assistant Surgeon, 12,944-59.

Mr. Hogan's case, 6383.

Sirkar: Assistant Surgeon, description of personal experience, I. 227.

Surgeon-General Harvey's case, 5160.

Soreness: Continued for some days at point of, 6384, 10,648, 10,717.

Swelling of Arm: Followed, 4694, 4750, 6383-4, 10,715-6, 16,330, 16,578.

Syphilis: No case known to have resulted from, 204.

Tetanus and Chorea: In a child followed, 4774.

Tubercle: No case known to have resulted from, 204.

Urticaria: Followed, 1806, 10,717-8.

Vomiting:

Followed, 4742.

Caused death in 48 hours after, 2763.

AGE AND INOCULATION:

Children in arms not inoculated at Karachi, 11,737.

Children not suitable to inoculation, 13,442.

Effect of inoculation on children, I. 400.

Number of inoculated persons at Karachi classified according to age, II. 376.

Old and infirm persons excluded from inoculation, 1759, 15,442.

Old men up to 90 years of age and infants 2 months old inoculated at Alibag, 25,878.

Table showing the ages of inoculated people at Banga, II. 94.

ANIMALS, EXPERIMENTS ON:

Small dose does not protect rabbits, 5204.

Small doses of Haffkine's fluid have no protective effect on animals, 5161.

See Rabbits.

ATTITUDE OF PEOPLE TOWARDS INOCULATION:

Bangalore: People inoculated partly for protection, but chiefly to avoid segregation, 3170, 3184.

Baroda: Inoculations encouraged at Undhera and elsewhere; number of inoculated persons in the State, II. 517 (R).

Baroda Cantonment: Native soldiers refused inoculations, 15,434.

INOCULATION WITH HAFFKINE'S FLUID—*cont.*

Belgaum: Withdrawal of privileges put a stop to inoculation, 23,132.

Bombay: Better class came forward in, 48.

Bombay: 25,358 people inoculated in 1898 in, 1363, 1366.

Bombay: Disliked because of fever and inconvenience caused, and doubt as to value of, 921.

Bombay: Disliked because of fear of communication of disease by the syringe, 919.

Bombay: Opposition decreasing, 922.

Broach: Parsees and Muhammadans favour inoculation, 15,511.

Calcutta: Better class people, and the Muhammadan leaders, came forward, 6643, 6650.

Calcutta: People will not take to it before plague, 6651.

Calcutta: Grows in popularity, I. 476.

Calcutta: Only 2490 inoculations in three months, 6557, 6640, 6645-6.

Calcutta: People who undergo inoculation looked down on, opposition strong, 7532-3.

Calcutta: Plague officers attacked, supposed inoculator murdered, I. 469.

Calcutta: Wild popular rumours of its evil effects circulated, I. 475.

Dharwar district: Fees paid for inoculation, 170.

Dharwar: 18,000 people left in one week for fear of inoculation, 23,746.

Dharwar: People get inoculated to secure certificate and privileges, 1963.

Dharwar: Villagers anxious to get inoculated, 1961.

Gadag: Fees paid by the people for inoculation, 23,871.

Gadag: General rush for inoculation to avoid segregation, 23,680.

General antagonism, 18,594.

Guntakal: Fear of inoculation because of sudden death of a man after the operation, 5968.

Hinganghat: People inoculated merely to secure privileges, 6046.

Hubli: Fee paid by the people for the benefit of inoculation, 23,871.

Hubli: Popular, 3163, I. 399.

Jawalapur: No inoculation done; strenuously objected to, 9211.

Madras City: In spite of official encouragement very few people got inoculated when outbreak of plague was threatened, 3872.

Madras Presidency: Adopted before appearance of plague, 170.

Mysore City: Inoculations were pressed; about one-seventh of the population inoculated before plague broke out, 25,034.

Native States averse to inoculation or any treatment at all, 9803-4.

Panjab: One village fully inoculated before plague broke out, owing to influence of an interested leading man, 10,723-8.

Panjab: People at Banga inoculated on advice and example of their leaders, 10,172.

Poorer classes specially inoculated at Hubli, I. 408.

Satara: Karad: People inoculated to obtain right to travel, 21,123.

Satara: People at first averse from but influenced by their doctors or officials with regard to inoculation, 22,391-400.

Satara: Strong objection against inoculation, 22,155.

Surat: Inoculation mostly of Bombay refugees who were anxious to return, 15,879.

Unpopular at first, much less unpopular later, 922, 3163.

BARS TO INOCULATION WITH HAFFKINE'S FLUID.

Anæmia, persons refused who suffer from, 16,588.

Diabetes, phthisis, old age, and marked plague debar from, 1759-62.

Fever or marked plague disqualifies for inoculation, 3068.

Fever; no person with temperature of 100 degrees should be inoculated, I. 400.

Infirmity and Bright's disease bars to inoculation, 1790-1.

Malarial fevers, refused to persons with, 16,588.

None, except infants, who applied rejected at Karachi, 11,737.

Pregnancy, weak health, or certain diseases as diabetes, form a bar to inoculation, 1689-95.

INOCULATION WITH HAPKINE'S FLUID—*cont.*

Sickly and weak persons and pregnant women not inoculated, 16,273.

Sickly infants, pregnant women, and people with fever not inoculated, 1812-4.

Weak persons dissuaded from, 12,967.

See Age and inoculation.

„ After effects of inoculation : *Pregnant women.*

CASTE, RELIGION, AND RACE, INOCULATIONS WITH REFERENCE TO :

Baroda : Table of inoculated and uninoculated according to castes and social position, II. 276.

Bajwa : Table of inoculated and uninoculated according to castes, II. 72.

Calcutta : Caste and sex and social position of inoculated, 6557.

Dhambdacha : Numbers of inoculated and uninoculated per castes, II. 268.

Europeans do not, as a rule, apply for inoculation, 1815.

Hindus persuaded to take it, 1363, 1366.

Jains, on account of their objection to anything which involves death of animals, are difficult, 7892.

Karachi : Weekly number of inoculations according to caste, II. 376.

Koili : Table of inoculated and uninoculated in the different castes, II. 270.

Low Class Cultivators : Inoculation applied for at Ankleshwar principally, 14,314.

Muhammadans offered themselves first for inoculation in Hubli, 3052.

Muhammadan soldiers at first object, 2319.

Muhammadans readily come at Calcutta, I. 476.

Muhammadans slow to take it up, 4016.

Muhammadans : Among those inoculated at Bangalore only 2163, 3432.

Muhammadans : Inoculation not resorted to at first, later more frequently resorted to in Bangalore, by 2636.

Muhammadans : Come forward to be inoculated in Calcutta, I. 476.

Muhammadans : Favour inoculation in Broach, 15,511.

Muhammadans : Set example of being inoculated in Calcutta, 6643.

Parsee gentlemen assisted in inoculation operations in Daman, I. 306.

Parsees favour inoculation in Broach, 15,511.

Parsees inoculated at Broach, II., App. LIII.

Undhera : Table of inoculated and uninoculated according to castes, II. 266.

CERTIFICATES OF INOCULATION :

Are occasionally transferred from one person to another, 25,504.

Certificates of inoculation liable to be taken from dead by relatives, 2480, 2482-7.

Certificates of single inoculation likely to be used by persons other than those to whom granted, to secure advantages of double inoculation, but not successfully, 23,872-4.

Certificates rarely sold, 2513.

Certificates very rarely transferred, 3089, I. 408.

Occasionally transferred, but nothing of the kind of a regular traffic in certificates existent, 1966-7.

Occasionally transferred, but not likely that a person should get inoculated in order to give his certificate away, 3089.

Prosecutions stop transference of certificates, 1965.

Refusal of relatives to return certificates of dead patients, 2647, 2714-5.

Thumb-marking for identification difficult in practice and an unnecessary precaution, 1965.

Transfers of certificates would, without doubt, take place if the transferor could make anything by it, 2676.

Transfers suspected in Mysore City in rare instances only, 25,040.

Where the register is kept properly there is little room for personation ; it may only come in afterwards by the transfer of certificates, 1964.

DOSAGE.

Amount injected, 32-34, 72, 141, 180, 185, 1832, 10,705-6.

Average dose fixed at 2½ c.c. 33, 4002, 4577.

Children stand a larger dose comparatively, 1748, 3009, I. 400.

INOCULATION WITH HAPKINE'S FLUID—*cont.*

Children stand proportionately much larger doses, 23,819.

Dose one-fifth more than standard dose given by Miss Corthorn, 23,812.

Experiments for obtaining a permanent immunisation by a succession of doses rapidly increasing from the minimum dose, 19,287.

Fighting weight the most important factor in standardising the dose, 3010.

Half dose used at Belgaum, 5627.

Larger dose given in cases where patient had not reacted on the first, 1751.

Uniform doses very important, 3156-7.

Uniform, dose should be more. Would save much trouble, 4064, 7889.

Use of a dose definitely known, the most important point in every vaccination, 26,449.

Women bear quite as strong doses as men, 23,813-5.

DURATION OF PROTECTION AFFORDED BY INOCULATION.

Details of cases to show that period of immunity is uncertain, II. 282.

Duration of protection probably at least 6 months, 1938.

Effects upon people living in good houses and fresh air last about 2 years, III. 43.

Investigations into the length of protection afforded by the prophylactic rendered impossible by the eagerness of the people to be inoculated over and over again, 26,436.

Newspaper statement that immunity from inoculation wears off in about 5 months, 11,760.

Period of immunity very uncertain, 15,438.

Period of immunity 6 months in the majority of cases, 23,723.

Table of plague cases among inoculated in Baroda cantonments, II. 289.

Table showing date of inoculation and of attack in Baroda, II. 282.

Table showing percentage of mortality from plague at Bulsar after inoculation had been introduced, II. 319.

Two cases admitted to Poona Hospital of bubonic plague 8 and 9 months after inoculation, 18,896.

EFFECTS OF INOCULATION WITH HAPKINE'S FLUID :

Attacks, on Plague :

Alibag : Instances of good effects in individual cases in, 25,879.

Baroda : Table showing date of inoculation and of attacks, II. 282.

Belgaum : List of persons inoculated and list of attacks and deaths among them, III. 211-2.

Belgaum : Two cases after inoculation in the 26th Madras Infantry, 25,932.

Billimora : List of plague cases inoculated, with particulars, II. 262.

Billimora : Percentage of attacks on the total population higher among the inoculated than the uninoculated, 14,835.

Bulsar : Number of attacks among the inoculated and uninoculated about the same, but the mortality greater among the uninoculated, 19,989-92.

Cases to show the effects of the prophylactic in actually preventing plague, 19,066.

Child, the only uninoculated person in a compound, attacked by plague at Belgaum, and dies, 4021.

Daman : Persons attacked in 1897, recovered, inoculated and attacked a second time a month later, 16,554.

Did not check the disease among the Tais at Bulsar, 16,280.

Disinfecting coolies and staff inoculated with good results, 10,006-8, 10,681-6, 10,690-4, 11,769, 22,668.

Family of 13, 4 inoculated, the other 9 died of plague, 1752.

Good results of inoculation among coolies on disinfecting gangs in Karachi, 22,618.

Good results of inoculation in chawls on the Telang property, Bombay, 17,878.

Great safeguard, 18,230.

Increases resisting power, 1788.

Karachi : List of all inoculated persons who developed plague, II. 395.

Karachi : Only one case among 900 inoculated, some of them contacts, 22,671.

INOCULATION WITH HAFFKINE'S FLUID—*cont.*

- Low figure of attacks and mortality in inoculated, 15,424.
 No attacks among inoculated at Calcutta, 6557.
 No case in 1,500 inoculated near Bellary, 4466-7.
 No deaths from plague among the Barodias, Bhois, Kachhias, and Mahrattas at Billimora, 14,357.
 Not a single attack among 200 inoculated kept under observation for five months, 18,519.
 Of 2 men, working in a disinfecting gang under the same conditions, the uninoculated died of plague, the other, who was inoculated and nursed the patient, remained well, 10,681.
 One person only out of 500 inoculated developed plague symptoms, 17,907.
 Only uninoculated person in family of sweepers gets plague, 2776.
 Percentage of recoveries, inoculated and uninoculated, in pneumonic plague, 2382.
 Plague cases among inoculated 6 days after injection, 15,421.
 Poona: No cases of death from plague among the inoculated, 12,971.
 Preventive against plague, 10,866.
 Protective remedy, 1059-60.
 Protects those in contact with plague cases, I. 399.
 Report of cases of plague among disinfecting gang inoculated with Haffkine's fluid, 10,006.
 Summary of observations on 2 groups of inoculated and uninoculated persons, 23,809.
 Two tables showing particulars of cases after inoculation, II. 153.
 Table of plague cases among inoculated in Baroda cantonments, II. 289.
 Table showing percentage of mortality from plague at Bulsar, after inoculation had been introduced, II. 319.
 There is no such thing as complete immunity, 27,375.
 Three cases in which plague appeared 10 days after, 14,941.

Clinical Symptoms of Plague, On :

- Cases among the inoculated of a milder type, 1843.
 Cases of inoculated so mild as to be almost unrecognisable, 69.
 Clinical history of 3 inoculated plague cases. Two recover from very mild attacks, 7236.
 Delirium and aphasia very rare in cases among inoculated, 14,977.
 If plague follows, symptoms among inoculated are of much milder type, 1869, 23,696.
 Inoculation seems greatly to modify the symptom of subsequent plague, 69.
 Plague among inoculated milder than in uninoculated, 14,997.
 Plague among the inoculated at Bulsar was of an attenuated type, 16,307.
 Plague cases milder in inoculated, 75, 1869, 2892.
 Pneumonic plague little influenced by inoculation, 2382.
 Temperature not high and less exhaustion in inoculated cases, 1843.
 Two cases describing course of disease in inoculated, I. 383.

Incubating Plague, On :

- Cannot arrest symptoms developed very soon after inoculation, 44.
 Favourable effect on incubating plague, 1772.
 May influence for good course of disease when injected during incubation, if infection has taken place 3 or 4 days previously, 45.
 Powerless to arrest incubating plague, 36.
 Probably harmful in plague cases of short incubation, I. 400.

Mortality, On Plague :

- Apparently saved a number of people from dying, but did not prevent plague from spreading, 24,447.
 Bangalore: Relative mortality of inoculated and uninoculated patients in hospitals, 2917-8.
 Bulsar: Number of attacks among the inoculated and uninoculated about the same, but the mortality greater among the uninoculated, 19,989-92.
 Keeps down the mortality of plague, 16,282.
 Miss Corthorn's table of plague death-rate among inoculated and uninoculated at Hubli, I. 76-7.

INOCULATION WITH HAFFKINE'S FLUID—*cont.*

- Multiple buboes: In Baroda 60 per cent. of multiple bubo cases recovered among the inoculated, 14,997.
 Rate of mortality reduced, 15,426.
 Reduces mortality from 80 to 90 per cent., 78.
 Sixteen out of 18 cases recover in Bombay after inoculation, 49.

Other Diseases, On :

- Appears to protect from disease generally, I. 338, I. 400.
 Asthma relieved, 4872, 17,966, 19,303-5.
 Cases to show the beneficial effect on the general health, 19,055.
 Dyspepsia, improves appetite, 4870.
 Eczema relieved, but lupus and tuberculosis aggravated, I. 400.
 Effects of inoculation on other diseases, 198-9, 201, I. 340, III. 43.
 Fever, chronic, relieved, 17,916, 17,963.
 General health much improved after inoculation, 25,443-5.
 Gout milder and at longer intervals after inoculation, 25,459.
 Headache, chronic, cured, 17,809.
 Hemiplegia, relieved, 16,631.
 Instance to show its effect on other disorders, 17,912-5.
 Leprosy, anæsthetic, marked improvement, 14,827.
 Lumbago relieved, 199, 17,916.
 Malarial fever, good effect on quartan, 199, 14,824.
 May have general prophylactic effect against other diseases, 198-9.
 Neuralgic pains, dissipated, 201, 14,824.
 Old complaints revived, 201, 16,627.
 Parametritis, revived by, 16,628.
 Polyuria, good effect on, 14,826.
 Rheumatism revived, 201, 16,627.
 Ringworm disappeared, 14,827.
 Statistic evidence does not prove that the plague prophylactic confers immunity against other diseases, 26,441.
 Venereal diseases benefited, 22,402.

On Spread of Plague :

- Alleged spread of plague in Daman owing to the use of Haffkine's fluid, 18,698-707.
 Alleged spread of plague in Dharwar owing to use of Haffkine's fluid, 18,684-98.
 Alleged spread of plague in Undhera owing to use of Haffkine's fluid, 18,707-13.
 Infection carried through an inoculated person who himself remained free, 10,753.
 Inoculated persons are not a source of danger to the uninoculated, 14,977.
 Inoculated persons do not spread the disease, I. 408.
 Not prejudicial to the uninoculated, 24,112.
 Produces an increase in mortality among the uninoculated, 18,703.
 Table in support of allegation that increased mortality at Daman followed inoculations, III. 65.

EXTENSIVE APPLICATION, WHEN RESORTED TO, AND GENERAL RESULTS OF :

- At first applied only where epidemic was severe, 165.
 Cannot be done quickly enough to stop epidemic, 7990.
 Cannot be carried out on same scale as vaccination, 7982.
 Five hundred inoculations a day a fair average, 4079.
 Produces good results mainly through the feeling of safety it provides, 23,680.
 Inoculation in Karad and Belgaum commenced when plague was practically over, 21,121, 25,930.
 Not general until plague becomes epidemic, 88.
 People refrain until panic-stricken, 4476.
 Prevents disturbance of trade, 1956.
 Useful as a means of allaying the dread of plague, 16,096.

HISTORY OF INOCULATION, IN :

- Alibag: Inoculations in the beginning of 1899, with particular instances of its protective effects in individual houses, 25,878-91.
 Ankleshwar: No positive results as to the value of inoculation at, plague dying out when commenced, 14,250.

INOCULATION WITH HAFFKINE'S FLUID—*cont.*

- Ankleshwar: Of 645 inoculated persons in, 4 died from plague, II. 242.
- Ankleshwar: Statement of inoculations with Haffkine's fluid at, II. 240.
- Baroda Cantonments: Plague occurrences among the inoculated and the uninoculated, 15,426.
- Baroda Cantonments: Native troops refused inoculation, 15,435.
- Baroda Cantonments: Register of persons living in cantonment maintained: total population 4,000: two thousand and forty-eight were inoculated: the balance reckoned as uninoculated, 15,401, 15,406, 15,475.
- Baroda City: Figures relating to inoculation in, 14,986-8.
- Baroda State: Evidence and report on inoculations, II. 261-78, II. 503-21.
- Belgaum: Eleven thousand persons inoculated in I. 202-3.
- Belgaum: Inoculations began in December 1897, 3,447 persons inoculated in the district, results of inoculation, 23,131-56.
- Belgaum: Major Forman's evidence regarding inoculations among his servants, 23,787-9, 23,102-9.
- Belgaum: Major Forman's evidence regarding inoculations among hospital servants, 23,797-9, 23,809.
- Belgaum: Number of plague casualties among inoculated not ascertained by inquiries at the time but by reference to registers which were very defective, 22,929-86.
- Belgaum: Registers very inaccurate; instances of omissions, 23,079-102.
- Belgaum: Two thousand five hundred and sixty-five persons inoculated in the city, 23,133.
- Belgaum: 26th Madras Infantry: Plague occurred on 12th November 1897, and inoculations commenced on 23rd December, when outbreak near its close: only two inoculated attacked, 25,927-33.
- Belgaum: 26th Madras Infantry: Second outbreak: On reappearance of plague the regiment re-inoculated at the men's request between 18th and end of August, only men away being uninoculated, 25,940-2.
- Belgaum: 26th Madras Infantry: Second outbreak: Lieutenant Lethbridge with the regiment from 5th September to 15th October 1898, and inoculated everyone in it, 5617-21.
- Belgaum: 26th Madras Infantry: Second outbreak: Re-inoculations began 10th September, and were done in 10 days, 5625-6.
- Belgaum: 26th Madras Infantry: Second outbreak: Lasted from July to December: Major Bannerman's details of cases, 25,934-8.
- Belgaum: 26th Madras Infantry: Second outbreak: Lieutenant Lethbridge's statement of cases in September and October, 5621-6.
- Broach: Encouraged by native practitioners, 15,504, 15,510.
- Broach: Inoculations, chiefly among the Parsees, 15,511; II. 522-3.
- Broach: Kantiajal: Good results of, at, 15,505.
- Bulsar: Census taken and statistics carefully checked, 16,288, 16,296-306.
- Bulsar: Comparison between inoculated and uninoculated Tai wards, 16,280-1, 19,970-94.
- Bulsar: Comparison between inoculated and uninoculated Ghanchi wards, 16,287.
- Bulsar: History of inoculations in Bulsar, 16,255-341.
- Bulsar: Inoculations performed to see to what extent they would stop plague, 75.
- Bulsar: Inoculated did not leave the place but uninoculated persons did so, 16,291.
- Bulsar: Table of results of inoculation, 16,256, 16,277; II. 320.
- Dharwar: Cases among inoculated and uninoculated in camp recorded only if found in the town, 1988, 1991, 1996, 2351-5.
- Dharwar: Deaths among people who left the town and camped outside not included in inoculation returns, 1976.
- Dharwar: Inoculations recommended on the outbreak of plague, 1974.
- Dharwar: Most people in the town inoculated, the people in camp being the large majority of the town population not inoculated, 1956, 1974-9, 1991-4, 2351,

INOCULATION WITH HAFFKINE'S FLUID—*cont.*

- Dharwar: Report on plague cases among inoculated, I. 429-38.
- Dharwar: Statistics of inoculation and plague, I. 67.
- Dharwar: Statistical comparison by Miss Corthorn of inoculated and uninoculated, 1763-71.
- Dharwar: Whole population inoculated in, except sick and aged, 1689.
- Dharwar District: Inoculations at Huilgol, II., 226.
- Dharwar District: Inoculations at Lingdhal, III., 225.
- Dharwar District: Villagers desired inoculation and were permitted to be inoculated, 1958-61.
- Dharwar Jail: All prisoners in inoculated successfully, 2263-4.
- Gadag-Betigeri: Classification of doubtful cases as inoculated or uninoculated done by Mr. Foy, 23,837, 23,863.
- Gadag-Betigeri: Inoculations done on a large scale, 23,630.
- Gadag-Betigeri: Miss Corthorn's figures obtained from official statistics supplemented by independent inquiry, 23,837-9.
- Gadag-Betigeri: Miss Corthorn's statistics of inoculation, 23,831.
- Gadag-Betigeri: Mr. Foy's statistics of inoculation, 23,727.
- Hyderabad State: Not introduced at, 5159, 5511, 18,141.
- Madras: Efforts to introduce in, 3871-2.
- Mora: Statistics of inoculation, 52, 27,310-8.
- Mysore City: Census not taken, and extent of exodus not determined, 24,977.
- Mysore City: Large numbers inoculated before plague broke out, 3482.
- Mysore City: Statement of inoculations at, III. 277.
- Mysore City: Statistics checked by inquiries but not very accurate, 25,037.
- Mysore City: Statistics of attacks and deaths among inoculated probably correct, 25,112-5.
- Mysore State: Evidence on inoculations of the native troops, I. 177-9.
- Panjab: Banga: Details of, in, 10,172-7.
- Panjab: Banga: Prophylactic inoculations done in, on a large scale, 10,235.
- Panjab: Garhshankar: Inoculations in, 10,674-8, 10,861.
- Poona Lunatic Asylum: Inoculations performed partly as a preventive and partly as an experiment, 12,841.
- Satara: Gave very good results, 22,156-61, 22,390.
- Satara: Seven hundred and eight persons inoculated, 22,390.
- Satara: Six hundred and ninety-one persons inoculated in the city, 22,154.
- Satara: Statistics of inoculation in the district, 1898-99, III. 190.
- Surat: Not tried at, 2061.
- Umreth camp: Inoculations on a large scale in, but the existing conditions offer no fair test of its efficiency, 14,088.
- Wardha: Evidence on plague cases and inoculations at, I. 225-7.
- See Bangalore.
- „ Bombay.
- „ Byculla Jail.
- „ Calcutta.
- „ Daman.
- „ Hubli.
- „ Karachi.
- „ Khoja Community.
- „ Kirki.
- „ Lanauli.
- „ Umarkhadi Jail.
- „ Undhera.
- IDENTIFICATION OF BODIES OF INOCULATED PERSONS:
- Bangalore City: Identification of dead thrown into the streets difficult, 3522.
- Bangalore Civil and Military Station: Identification in doubtful cases difficult, and depends on inquiries, 2645-6.
- Hubli: Dead bodies classed as inoculated or not after careful inquiry; tendency of people to assert that uninoculated dead have been inoculated, 1726.
- Hubli: Half the dead found in the streets had inoculation certificates on them, 3093.

INOCULATION WITH HAFKINE'S FLUID—*cont.*

- Hubli: Inoculation register had no index, 2523.
 Hubli: Method of registering deaths. Over 95 per cent. of bodies identified I. 400, 409.
 Hubli: No difficulty in identifying the dead as inoculated or not by register and certificates, 1964-5.
 Hubli: The unidentified dead classed as inoculated or not according to the proportion of each class shown by the census to be in the town, 3082-4, 3131-7, 3181-2.
 Hubli: Statistics assume a man inoculated if no certificate is found, 2473-7, 2515-3, 2530.
 Mysore City: Inquiries made and certificate recovered if possible, but margin of error remained, 25,033-9.

INDUCEMENTS TO INOCULATION WITH HAFKINE'S FLUID:

- Alibag: Inoculates allowed to remain in their houses and go where they like, 25,880, 25,833.
 Bangalore City: In houses, where all inmates inoculated, neither sick nor contacts removed, 3292.
 Bangalore City: Privileges for inoculated same as at Hubli, 3298-9, 3315-6.
 Bangalore Civil and Military Station: Contacts from going to camp, inoculation exempts, 2637.
 Bangalore Civil and Military Station: Contacts not evacuated at Bangalore if inoculated, 2576.
 Bangalore Civil and Military Station: Inoculated contacts allowed to remain in their houses, if good, otherwise to go where they please, 2637, 2661-4.
 Bangalore Civil and Military Station: No restrictions on the movements of the inoculated, 2637, 2661.
 Baroda State: Inoculated persons not forced to vacate their houses in the villages of Baroda State, 15084.
 Baroda State: Passes offered in the Naosari district as an inducement, 15,071.
 Belgaum: Privileges to inoculated at Belgaum, 23,132.
 Bombay: Certificates given to inoculates which passed them on railways. Not treated as contacts, 1366.
 Bombay: Contacts given the option between inoculation and removal to camp, 17,878.
 Bulsar: Concessions in the way of treatment of sick in their own houses, &c. given to the inoculated, 16,291.
 Calcutta: Inoculated persons practically free of all plague measures, 6537-9.
 Calcutta: Segregation, inoculated families promised freedom from, I. 468.
 Dharwar: Concessions granted to inoculated persons in the matter of return to evacuated houses, 2337, 23,746-7, 23,763-6.
 Discomforts of plague measures, people would submit to inoculation to avoid the, 10,727.
 Hubli: Certificate to enable travelling without detention and short time of segregation induced the people in Hubli to submit to inoculation, 2428-34.
 Hubli: Inoculated persons re-admitted to evacuated areas after 10 days, 1955.
 Hubli: Inoculation encouraged by moral suasion and grant of privileges, 2471-2, 3055, 19,889.
 Hubli: Method of persuading people to inoculation at Hubli, I. 398-9.
 Hubli: No rule prohibiting non-inoculated from re-occupying their houses, but they could not travel by road or rail, 3158-9.
 Hubli: People induced to submit to inoculation by the offer of privileges, 19,826-8, 19,888.
 Hubli: People not allowed to return from segregation to infected places unless inoculated, 2432-3.
 Hubli: The once inoculated had no privileges in segregation, 3164.
 Hubli: Twice inoculated persons allowed to return to their houses at once after disinfection, 23,375.
 Karachi: Inoculates not segregated, II. 423.
 Karachi: Only inducement that inoculates were not turned out of their houses, 11,756.
 Mysore City: Number of people probably inoculated in order to leave the place, as facilities for travelling granted to inoculates, 25,108.

INVESTIGATION SHEETS:

- Banga: Tables of inoculated and uninoculated persons in the houses attacked with plague, II. 91-93.

INOCULATION WITH HAFKINE'S FLUID—*cont.*

- Baroda State: Manner in which investigation sheets prepared, 15,040-54.
 Belgaum: Investigation sheets of four houses in Belgaum prepared by Colonel Peters, I.M.S., 23,108-15.
 Billimora (Baroda State): Table of inoculated and uninoculated in the same houses, II. 263.
 Daman: Particulars of households where inoculation was applied and plague occurred, I. 310-30.
 Hubli: Investigation sheets prepared from cases selected by Lieutenant Keelan as good cases, 19,877-88, 19,899-906.
 Hubli: Investigation sheets selected from 200 cases collected and investigated by Lieutenant Keelan, 19,829-35.
 Hubli: Investigation sheets, 60 cases appended to Leumann's Report selected by him from 200 cases picked and chosen for him by Lieutenant Keelan, 1725.
 Hubli: Plague cases (house by house) in inoculated houses, I. 417-28.
 Kantharia (Baroda State): Investigation sheets synopsis, II. 506.
 Karachi: Details of plague cases in houses inhabited by inoculated persons, II. 428-42.
 Koili (Baroda State): List of cases with particulars among inoculated, II. 269.
 Koili (Baroda State): Table showing the results of inoculations, II. 277.
 Undhara: Cases among inoculated and uninoculated, house by house, I. 333-6.
 Undhara: Summary by houses of plague cases, I. 331.

METHOD OF PERFORMING INOCULATIONS:

- An operation requiring very little skill, 178.
 Place generally in left arm, rarely flank, 1,746-7.
 Precautions for cleaning inoculating instruments, 1752.

PERIOD AFTER WHICH PROTECTIVE EFFECT EXERTED:

- Acts in from 12 to 24 hours, 144.
 Affords some protection from first day, 1774.
 Beneficial within 24 hours, 47.
 Protection begins in 24 hours, 4024.
 Rapidity of action, 47.

PERSONS RECOVERED FROM PLAGUE; INOCULATION OF:

- Reaction does not differ from that in persons who have not had plague, 1537.
 Recovered plague cases not inoculated, 2504.

REACTION AFTER INOCULATION OF HAFKINE'S FLUID:

- Amount of:*
 Above 103° not observed after inoculation, 14,319.
 Above 104° not observed after inoculation, 14,520.
 Average temperature, 103°, 16,571.
 Average resulting temperature, 101° 8', 778.
 Between 100° and 103°, 12,398.
 Higher in men than in women after inoculation, 23,813.
 Highest 24 hours after inoculation, 10,796.
 Inoculation of the 26th Madras Infantry gave so little discomfort that they submitted willingly to a second, and were anxious for a third, 25,942.
 Maximum after inoculation, 102½°, 32.
 No excessive reaction observed, 6338.
 Reaction temperature after inoculation ought not to be less than 102°, 3006.
 Subnormal after, 20,471.
 Some of the doses did not give enough febrile reaction, 2996.
 Temperature aimed at after inoculation 102½°, 32.

Animals, In:

- Effect of injection into animals, 28, 29.

Europeans, In:

- Europeans suffer more than natives from, 4858-9.
 Produces stronger reaction in Europeans than in natives, 4858-9.

Old Men, In:

- Small doses given to old persons and little children, give very little reaction, 25,891.

Particular Instances, In:

- Bangalore: Maximum temperature resulting 104°, 4837.
 Baroda: Highest temperature 104, 15,417.

INOCULATION WITH HAFFKINE'S FLUID—*cont.*

- Bombay: Byculla Jail: Did not react on several of the prisoners in, 20,365.
 Bombay: Byculla Jail: Prisoners suffered severely from, 20,364.
 Bombay: Umarkhadi Jail: Its discomforts did not last beyond 36 hours, 20,315.
 Calcutta: Highest temperature observed, 105°, 6663.
 Hubli: Temperature obtained 106°, 2000.
 Karachi Jail: Highest temperature 104°, lowest 99° after, 11,563-4.
 Mr. Haffkine: Effect of inoculation on, 32.
 Wardha and Nagpur: Report of 201 inoculations in, with special reference to the reaction produced, I. 460-1.

Persons recovered from Plague, In:

Reaction in those recovered from plague not in any way different, 1537.

Re-inoculation, After:

No diminution in the severity of the reaction after three subsequent inoculations, 19,050.
 Second inoculation, effect more severe, 6626.
 Temperature reaction about the same as in the first, 23,820.

Variety in:

Great variation in the general symptoms after, 11,573.
 Great variety in different views, 6330.
 Reaction sometimes too slight, sometimes excessive, in Calcutta, 6622-4.
 Standard dose does not produce the same symptoms in each healthy individual, 5095.
 Varies with individuals after same doses; ideal temperature 102°, 76, 10,797-800, 17,490-5.
 Varying after inoculation of the inmates of the lunatic asylum, 12,963.
 See After effects of inoculation, fever and severe symptoms from.

RE-INOCULATION.

Attitude towards:

People generally object to second inoculation, 10,166.
 Second inoculation would make process unpopular, 4062.

Dharwar:

Dharwar: Measures adopted for the re-admission to the town of the people only after double inoculation, 23,746-7.
 Dharwar: One hundred thousand people inoculated, nearly all twice, 25,163.

Dose:

Larger dose given in cases where patients had not reacted on the first, 1751.

Effect of:

Effect of second inoculation less marked locally than that of first, 111.
 Second inoculation, effect more severe, 6626.
 Temperature reaction about the same as in the first, 23,820.

Hubli, At:

Comparative death-rate of inoculated (once or twice), I. 401-6.
 Double inoculation recommended in all cases, 3164, 3187.
 Effects of re-inoculation at Hubli, 70.
 Second inoculation benefits in Hubli by 10 per cent., I. 407.
 Second inoculations have no obvious effect at Hubli, 72.
 Statistics with regard to second inoculation at Hubli, I. 404-6.

Inducements to:

Bangalore: For obtaining a pass by rail or road at Bangalore it was necessary to show a certificate bearing date of second inoculation 10 days previous, 3159.
 Gadag: Once inoculated have no advantages, and double inoculation only confers privileges, 23,864, 23,869.
 Hubli: Once inoculated persons had no privileges, 3164.

INOCULATION WITH HAFFKINE'S FLUID—*cont.*

Hubli: Twice inoculated persons given passes permitting them to travel, 1687.
 Hubli: Twice inoculated persons not segregated, 19,826.
 Hubli: Twice inoculated persons allowed to reoccupy houses directly after their disinfection, 23,375.

Interval between 1st and 2nd Inoculation:

Second inoculation from 7 to 10 days after first, 1749.
 Three days shortest interval between first and second inoculation, 4008.

Plague after:

European case after twice inoculation with Haffkine's fluid in Poona, 21,293.
 European soldier contracts plague after having been inoculated twice, 21,293.
 Instance of Banniah three times inoculated died of plague, 16,669.
 No person known to have had plague after twice inoculation, 11,772.
 Person twice inoculated dies of plague, 22,936.

Reasons for:

Bacteriological ground for re-inoculation shown by agglomeration and bactericidal effect of blood of twice inoculated persons, 3187-216, I. 398.
 Ideal method, double inoculation, first with a trial dose, 77.
 Reasons for inoculating twice, 3038.
 Two operations advisable, first dose as a means of testing, 1482.

STANDARDISATION OF DOSE:

Control experiments not always made by inoculators to standardise the doses, 3023-8, 6321, 10,803-7, 11,702-3, 14,808-11.
 Dose found too weak at Hubli on account of observations of reactions produced and increased, I. 398.
 Estimate of dose obtained from the reaction observed in inoculated, 26,466.
 Holding up the bottle to the light is not an effectual method for the standardisation of the fluid, 26,485.
 Individual physical conditions a guide to the standardising of the dose, 19,279.
 Microbe of known virulence, the use of a, and an absolutely aseptic vaccine the necessary factors in, 26,488.
 Microbe employed in cultivation and quantity of vaccine, connexion between virulence of, 58.
 Mr. Haffkine's instructions that each inoculator should watch the first 10 or 20 patients of each new series of inoculation, and standardise by results produced by them, 78.
 No difficulty in standardising dose by using standard fixed in laboratory raised according to indications obtained from observations of reaction in persons coming for re-inoculation, 1743.
 Severe symptoms not always corresponding with a rise in temperature, 11,574.
 Standard dose 2½ c.c., 72.
 Standardising of the fluid not practicable under ordinary circumstances by observing test cases, 10,807.
 Some of the doses did not give enough febrile reaction, 2996.
 Strength of dose tested experimentally on control cases, 2999.
 The standard of its efficacy is based on the reaction it produces, 26,494.
 Weighing of the sediment considered not a satisfactory method for standardising the fluid, in view of the fact that the intention is to standardise by temperature reaction, 26,472-81.

STATISTICS RELATING TO INOCULATION:

Errors of:

Exclusion from inoculation of the very old and very young may account for the higher percentage of deaths among uninoculated, 17,808.
 Uninoculated people coming to die in the town may corrupt statistics, 2350.

Plague and Inoculation:

Bangalore: Statistics of troops, I. 114-5, I. 165-75; III. 281-7.
 Bangalore and Mysore: Statement of weekly number of inoculations from September 2nd, 1898 to February 28th, 1899, III. 276-7.

INOCULATION WITH HAPKINE'S FLUID—*cont.*

- Baroda: Bajwa: Weekly gross mortality from plague among inoculated and uninoculated after February 18th, 1898, II. 272.
- Baroda: Billimora: Table of gross mortality from plague after introduction of inoculation, II. 265.
- Baroda: Billimora: Statement of inoculated and uninoculated with results per castes, II. 263.
- Baroda: Billimora: Table of inoculated and uninoculated according to age, II. 265.
- Baroda: Billimora: Table of inoculated and uninoculated according to castes, II. 504.
- Baroda: Billimora: Table of weekly gross mortality from December 20th, 1896, II. 264.
- Baroda: Billimora: Table of weekly gross mortality from February 3rd, 1898, II. 264.
- Baroda City: Weekly gross mortality from causes other than plague amongst inoculated and uninoculated, II. 275.
- Baroda City: Table of weekly gross mortality among inoculated and uninoculated, II. 275.
- Baroda: Dhamdacha: Statistics of inoculations, II. 267.
- Baroda: Dhamdacha: Table of gross mortality for three months previous to the first epidemic, II. 268.
- Baroda: Dhamdacha: Table of gross mortality for three months previous to the second epidemic, II. 268.
- Baroda: Dhamdacha: Table of gross mortality for three months previous to the third epidemic, II. 268.
- Baroda: Dhamdacha: Table of gross mortality from plague and other causes during the three epidemics, II. 268-9.
- Baroda: District Villages: Table of results of inoculations, II. 273.
- Baroda: Gandevi: Gross mortality from causes other than plague amongst the inoculated and uninoculated, II. 272.
- Baroda: Gandevi: Gross mortality from plague and other causes from January 28, 1898, II. 271.
- Baroda: Gandevi: Table of gross mortality from plague and all other causes from December 25th, 1896, II. 271.
- Baroda: Kadi District Villages: Details of inoculations, II. 274.
- Baroda: Naosari District: Details of inoculations in the villages, II. 273.
- Belgaum: List of persons inoculated and list of attacks and deaths among them, III. 211-2.
- Belgaum: Table of occurrence of plague in house inhabited by persons inoculated against plague, III. 209.
- Bulsar: Table of gross mortality from plague and other diseases among inoculated and uninoculated, II. 326.
- Bulsar: Table of particulars as to locality, attacks, and deaths from plague and other causes, II. 318.
- Deaths among inoculated two per cent., uninoculated 70 per cent., 25,429.
- Dharwar and Hubli: Death-rate of uninoculated, 9 and 14 per cent. respectively, 1727.
- Dharwar: Miss Corthorn's table of plague death-rate among inoculated and uninoculated, I. 76-7.
- Dharwar: Table of results, I. 67.
- Gadag-Betigeri: Table of attacks and deaths from plague, II. 234.
- Gadag-Betigeri: Weekly census of the number of uninoculated, once inoculated, and twice inoculated, III. 238.
- Gadag-Betigeri: Weekly census of plague incidence among uninoculated, once inoculated, and twice inoculated, III. 239.
- Hubli: Course of plague and inoculation, I. 65.
- Hubli: Discrepancies in statistics, 3056-65.
- Hubli: Statistics, 1819-24, 25, 151.
- Hubli: Table showing inoculation and death statistics, I. 65.
- Karachi: Table of gross mortality from plague and other causes, II. 151.
- Karachi: Table of weekly number of inoculations, II. 375.

STRENGTH OF HAPKINE'S FLUID:

- Comparison of cases inoculated at Daman with doses of different strength, I. 309.
- Effect of weak vaccine in Daman and Kirki, 72.
- Inferior vaccine at Kirki and Lanauli, 184-90.

INOCULATION WITH HAPKINE'S FLUID—*cont.*

- Least successful at Kirki, where vaccine weak, 68, 75, 119.
- Lower average of temperature after inoculation at Kirki and Lanauli, 184-8.
- Variety in strength of brew inevitable, 72.
- Weaker fluid or smaller doses reduce protection, I. 307.
- Weaker vaccine in larger doses does not give as powerful a reaction as a stronger vaccine in small doses, 27, 257.

INSECTS:

- Flies, fleas, bugs, and mosquitos not agents in spreading plague in the Arthur Road Hospital Bombay, 20,540-1, 20,999-21,004.

- See Ants.
" Bugs.
" Fleas.

INTERVAL BETWEEN INTRODUCTION OF PLAGUE AND EPIDEMIC:

- Cases illustrating a long interval between arrival of imported cases and the first indigenous case, 10,223-4.
- Interval in the case of Aur, 10,224, 10,549-53.
- Interval in the case of Bobleswar, 19,513.
- Interval in the case of Dahan, 10,091, 10,224.
- Interval in the case of Gobindpur, 10,224.
- Interval in the case of Igatpuri, 19,509.
- Interval in the case of Ilkal, 19,512.
- Interval in the case of Kajurg, 5501.
- Interval in the case of Khatkar Kalan, 9919-36.
- Interval in the case of Mahlgahla, 9987, 10,348.
- Maps prepared to show intervals in Bombay, but not strictly accurate to say that time between first imported and first local case is the time it takes to make a place infected, 17,135.
- No hitherto published theory sufficient to explain the fact of the long interval between the first importation of plague and the general outbreak, 8566, 8630.
- Plague possibly temporarily dormant on first introduction, 214-5, 295.
- Three weeks the period between the importation of a plague case and the actual outbreak, 19,512.

INVOLUTION FORMS OF BACILLUS OF PLAGUE:

Animals, in:

- Involution forms of plague bacilli seen after death at the seat of inoculation in a cat and guinea pig, 26,227.

Development of:

- Bouillon, involution forms not developed in, 8718.
- Salt agar, involution forms will develop in 24 hours if kept in the incubator, in cultures with, 8717.
- Salt added to the agar-agar causes the involution forms to develop very rapidly, II. 4; 8599.

Human Body, in:

- Human body, involution forms found in, and appear to be a post-mortem change, I. 376.

Test of culture:

- Development of involution forms a practically valuable test whether or not the culture is of plague, 8668.

Toxic power:

- The toxic power of the microbe attenuated through the effects of involution, 8520.

Variety of:

- In cultures of plague the involution forms are more distinct in older than younger bacilli, I. 376.
- Involution forms are very common where the cultivation media are not absolutely suitable, 27,327.
- Size and involution forms vary considerably in different growths, and individuals of the same growth, 26,402.

ISOLATION OF PLAGUE BACILLUS :

Difficulties of :

- Details of experiment for the discovery of the plague bacillus, I. 139-40.
 Difficulties of search, 8510-13.
 Difficulty of detecting the bacillus in articles examined owing to rapid growth of contaminating micro-organisms, 26,341, 26,391.
 Inoculation into rats best method of testing for presence of plague, 697.
 No method for identifying the microbe in articles of clothing, mud, or cow-dung, 8537.
 No method for identifying bacillus outside plague patient or plague rat, 151.

See Carbonic acid gas.

- .. Cultures.
- .. Hankin's method.
- .. Hydrogen.
- .. Inoculation of plague virus.
- .. Microscopic appearances.
- .. Staining.
- .. Stalactite formation.

In Animals :

- Animals can die of plague without the microbe being discoverable in their bodies after death, 8613.
 Ants: Not found in ants, 635, 8530.
 Cattle: Diplo-bacteria similar to those found in plague rats discovered in the blood of cattle during the epidemic at Calcutta, 1897, 26,942.
 Cat and guinea-pig: Involution forms of plague bacilli seen after death at the seat of inoculation in a cat and guinea-pig, 26,227.
 Cats: Found in cats with typical plague symptoms, 20,424.
 Fleas: Not found in fleas, 8600.
 Fleas: Said to be found in fleas, 151.
 Guinea-pigs: Found in the intestines of a guinea-pig, 27,336.
 Guinea-pigs: Easily discovered in the bronchial contents of guinea-pigs in laboratory experiments, 27,341.
 Recoverable from body of dead animals up to 21 days after burial, 27,382.
 Leeches: Isolated from leeches which had been applied to buboes, 22,287.
 Mice: Spleen and liver of mouse dead of plague found full of plague bacilli, 26,324.
See Rats.

In the Human Body :

- Bronchi: Found in the bronchi, 6916.
 Kidneys: Found post mortem in kidney I. 370.
 Lesions: Found in four cases in small lesions of the skin, 1393.
 Lesions: Cultures obtained from small lesions; blood remained sterile, I. 374.
 Liver: Found in liver of plague corpses, 7189.
 Liver: Found post mortem in liver, I. 370.
 Nose: Found in the bloody discharge from the nose in patient of sub mental buboes, 26,259.
 Saliva: Found in saliva of ordinary bubonic cases occasionally, once 10 days after pyrexia, 25,355.
 Spleen: Found in spleen of plague corpses, 7189.
 Spleen: Found post-mortem in spleen, I. 370.
 Sweat: Never discovered in sweat, 26,393.
 Throat: Found in the throat 19 days after fever had subsided, 25,312.
 Tongue: Found twice in the fur at the back of the tongue out of 20 cases, 27,055.

See Blood.

- .. Carbuncles.
- .. Faeces.
- .. Glands.
- .. Lungs.
- .. Sputum.
- .. Urine.

Outside the Animal Organism :

- After several months' work only found in one case outside of patients in salt water in a pond, 8510.
 Not detected outside plague patients, 158.

ISOLATION OF PLAGUE BACILLUS—*cont.*

- Once found in soiled matting which had been used as bedding, 25,394.
 Results of experiments with suspected substances of human and animal origin, II. 15.
See Clothes.
 .. Grain.
 .. Merchandise.
 .. Soil.

ISOLATION OF THE SICK :

- In small-pox and other diseases natives recognise value of, and enforce isolation of the sick, 7,038.
 Isolating the sick most necessary, 12,053-5, 13,191, 21,540.
 Isolation of the sick imperfectly carried out by people in camps in Sind, 11,894.
 Isolation of the sick, &c., did not stop the progress of the disease at Baroda, 14,604.
 Isolation of sick, one of measures applied in the Panjab, 10,450.
 Plague-stricken at Nasik at once taken to plague camp, 13,764.
 People alive to the benefit of isolating the sick in Karachi, 11,378.
See Removal of the sick to hospital.
 .. Treatment of the sick in their own houses.

ISOLATION OF THE SICK IN THEIR OWN HOUSES :

- See Treatment of the sick in their own houses.*

IZAL :

- Action on bubonic microbe, II. 5.
 Izal 1 in 300 capable of killing the plague bacillus in 3 minutes, 27,401.

JAINS :

- Jains among the first to suffer in Bombay, 911.
 Jains had the highest mortality rate in Bombay, this being due to the fact that animal life is sacred among them, 17,681.
 Jains, on account of their objection to anything which involves the death of animals, are difficult to deal with with respect to inoculation, 7,892.
See Banniahs.
 .. Habits of people affecting liability to plague.

JEYES' FLUID :

Disinfection by :

- Clothes of passengers entering Karachi by sea disinfected with Jeyes' fluid, 4243.
 Jeyes' fluid in strong solution enough to kill bacillus would hurt people so much that they could not stand it, 4305.

KARACHI :

Inoculation with Haffkine's Prophylactic :

- Inoculated left the city, but not more than uninoculated, 11,756.
 No roll call or anything of that sort in the voluntary camps, 11,374, 11,879.
 Population during period of inoculation arrived at by approximate estimate, 11,713-7, II. 424, 11,804.
 Report on the effects of inoculations, II. 375-97.
 Results on prisoners negative, as plague ceased in the city at the time of inoculation, 11,548.
 Summary of results of inoculation, 11,758, 11,765, II. 424-5.
 Statement of results of inoculation among the people, 11,758-65.
 Statistics of inoculation to be accepted with caution as population of Karachi during plague not accurately known, 11,765, II. 425.
See Khoja Community.

Introduction of plague into :

- First case came to notice on 10th December 1896, other cases being detected immediately afterwards, and no connexion between the earliest cases being traced, 11,092-3, 11,099, 11,101, 11,846.

KARACHI—cont.

- First case occurred in a good quarter, in a person who had had no direct communication with Bombay, 11,096, 12,984, 13,216.
- Gunny bags: Ascertained to have been the means of importation of plague into Karachi, but no proof of assertion, 817.
- Gunny bags: Examined, but no traces of plague found in them, 635.
- No plague in Karachi between the first and second epidemics; authorities confident that the city was quite free, 11,183.
- Rats or cargo probable means of first importation of plague by sea from Bombay to Karachi, 12,984.
- Sea: Disease must have come to Karachi in 1896 by sea from Bombay, 11,338.
- Sea: Strict precautions taken against importation of infection by sea between the first and second epidemics at Karachi, 11,598, 12,151, 12,218, 12,317-8.
- Second epidemic: First cases at end of March 1899, no connexion traced, 11,181, 11,512-22.
- Second epidemic: First case in quarter not infected in first epidemic, in person of a man working at the Native Jetty, hence assumption that infection imported in cargo, 13,215-6, 13,220.
- Second epidemic: Rats died before the first case came to the notice of the authorities, 11,198, 11,308.
- Second epidemic: Joria Bazar infected, no connexion traced with first case occurring in a different part of the town and no source of infection ascertained, 11,188, 11,197-200, 13,344.
- Suspicious cases between the first and second epidemics, 11,599-610, 11,611-2.

Statistics relating to:

- Population estimated at 130,000 at the time of the first outbreak, 11,071.
- Statistics of death-rate for the period between the two epidemics compared with three other towns in Sind, II. 142a.
- Weekly number of plague cases and deaths from March 17th to November 4th, 1898, II. 424.

KHOJA COMMUNITY.

Inoculation with Mr. Haffkine's prophylactic in the:

- Khoja community: The low rate of mortality from general causes in the inoculated probably due to unconscious selection of cases for inoculation, 26,500-3.
- Khojas in Poona inoculated at H.H. the Aga Khan's house, 12,965.

Bombay Khojas:

- Comparability of the inoculated and the uninoculated, 199.
- Deaths and inoculations at different ages in the Khoja community of Bombay, 17,845.
- Figures for the Khoja community, Bombay, obtained from the Jamaat books which are most accurate, 17,846-51.
- Inoculations among the Khojas of Bombay, 17,793-822.
- Inoculations in the Khoja community of Bombay, 69, 90.
- List of inoculated Khojas treated in the Khoja Hospital, Bombay, III. 404-6.
- Nominal roll of inoculated and uninoculated Khojas in Bombay who died of plague and other diseases from April to December 1898, III. 399-403.
- Report by Mr. Haffkine on inoculations in the Khoja community of Bombay, I. 337-344.
- Statement of Surgeon General Harvey's inquiry into the statistics relating to inoculations among, 26,435-42.

Karachi Khojas:

- Census of Panjabhai Khojas, showing occupation, &c. in Karachi, accurate, 11,718-24, 11,734.
- Gross mortality among Panjabhai Khojas at Karachi from October 1898, to January 1899, 11,780.
- Gross mortality among Panjabhai Khojas in period before plague at Karachi, 11,728.

Y 6266.

KHOJA COMMUNITY—cont.

- Mortality among Panjabhai Khojas at Karachi during plague period from causes other than plague, 11,740.
- Mr. Kaka's report on inoculation among the Khojas and other persons at Karachi, II. 423-45.
- Mr. Kaka's statistics checked by special house to house inquiries by Khoja headmen, 13,233.
- Mr. Kaka's statistics of attacks and deaths derived from comparison of nominal rolls of casualties and inoculates, 13,227-39.
- No explanation of difference between death-rate of inoculated and uninoculated children among Panjabhai Khojas, Karachi, 11,747-54.
- Plague mortality among Panjabhai Khojas at Karachi, 11,735.
- Possible that errors made in classifying dead persons as inoculated or uninoculated, 11,752-4.
- Possible that inoculated persons resist disease better than uninoculated, 11,746.
- Results of inoculation among Pirai Khojas, 11,772-6.
- Verification of cause of death by corpse inspection not always made, 13,259.
- See Karachi.*

KIDNEYS:

Clinical Features of Plague:

- Albumenuria, 10,422, 12,409, 15,300.
- Hæmaturia, 15,307.

Discovery of Bacillus of Plague in:

- Found post-mortem in kidney, I. 370.

Post mortem Appearances:

- Of kidneys, 1421.
- Only in two cases of post-mortem kidneys found to be affected, 9622.
- Sometimes petechiæ on the capsule of the kidneys in bubonic plague, 10,421.

KILN BURNING:

Adoption of:

- Hyderabad State, introduced by Mr. Stevens, all native floors to be treated with it, in, I. 443.
- Hyderabad State: Kiln burning adopted to exclusion of other measures, 5443-9, 5846.
- Thana: Used in, 19,673.
- Umreth: Golas quarters disinfected by kiln burning, 14,037.

Attitude towards:

- Approved by all village officers and by villagers themselves, I. 443.
- Kiln method employed at Hyderabad popular, 5159.

Danger of:

- Apt to give infection to persons employed in digging up the floors, 24,092.
- Kiln burning a dangerous process on account of the carelessness of the coolies, 22,727.
- Previous lime-washing important to lay dust and secure completeness, I. 456.

Efficacy of:

- Effect of kiln method on mortality in Hyderabad villages, I. 459.
- Fresh cases of plague in village disinfected by kiln burning process, 22,716-32.
- In the Nizam's territory, used with great success, 5449.
- No bacillus found after its use, I. 442.
- No cases returned after floors have been dug up and burned, 5449, 5851.
- No second outbreak after use of kiln method, 5471.
- Sufficient without further disinfectants, 5470.

Expense:

- Great cheapness an advantage of kiln burning, 5059.
- Kiln system cheaper than disinfection with perchloride of mercury, 19,677.

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KILN BURNING—cont.

Method of:

Kilns should be allowed to smoulder for a week and when removed can be used as manure, I. 456.
Full description of, 5469-72, I. 456.
Plan of kiln, I. 457.

Necessity of:

All floors should be burned throughout India, I. 447.
Advantages of kiln burning compared with chemical disinfection, 5159, 19,675.

KIRKI:

Inoculation with Mr. Haffkine's prophylactic in:

Doses used at Kirki, 184-190.
Epidemic from July to September 1897, 21,206, 21,222.
Five hundred and sixty-one deaths during epidemic, 21,314.
Inoculations performed at Kirki, 68.
People left the town during the period of the inoculation, 160.
Records of inoculations at Kirki valueless, 21,230-5.
Special report made for Mr. Haffkine's report, probably not based on the records said to be valueless, 21,975-81.
Statistics personally checked by Mr. Haffkine, 26,531-4.
Statistics of plague and inoculation in Kirki, 26,535.

KUMAUN:

See Bombay, *Introduction of plague into*.
„ Mahamari and Sanjar.

LABORATORIES:

See Bacteriological laboratories.

LACTIC ACID:

Results of experiments, II. 7.

LANAULI:

Inoculation with Mr. Haffkine's prophylactic in:

Doses used at Lanauli 184-190.
Effects of inoculation at Lanauli striking, inoculated part of town having no plague and the other part suffering, 18,430-3.
Inoculations performed at Lanauli in July, 1897, 60-65.
Lanauli investigation sheets, 161.
People left Lanauli during inoculation period, 160.
Statistics of plague and inoculation in Lanauli, 26,535.

LATRINES:

Arrangements for and attitude towards:

Anand Camp: Latrine arrangements, 14,144.
Bangalore: Privies generally in cow yard, 4912.
Bombay: The provisions of the new Act with regard to privies will be difficult to carry out, 872.
Dharwar: Five public latrines and two trenches capable of holding 20 seats, 2306, 2327.
Dharwar: Quite inadequate for the large population, 2313.
Hinganghat: Public latrines outside the town; fairly well-to-do people have privies in their back yard, 6262-5.
Indian habit of making a *latrine* of the roads ought and can be stopped, 24,194.
Karachi: Voluntary camps: Narrow trench dry earth system of, with compartments used, 11,884.
Mahajans have a great dislike to the use of latrines, 13,351.
Mandvi: Latrine arrangements extremely bad at beginning of epidemic, 13,351.
Sind: Common custom to use the top of the houses as w.c., 11,088.
Surat: Several thousand pit privies closed with earth, and open privies constructed over them, 24,459.

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Latrines and Plague:

Disinfection of public latrines is often shirked owing to caste and prejudice, II. 13a.
Latrines in need of efficient disinfection, II. 13.
One compound infected in which only means of communication of infection was the latrine, 11,958.

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Characteristic growth from leeches which had been applied to plague buboes, 22,286.
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LESIONS:

Discovery of Bacillus in:

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Frequency of:

Abrasions: Plague patients generally have many abrasions on the skin, ring-worm, scabies, &c., 1393.
Natives commonly have scabs and eczema, 18,506.
Natives suffer much from skin diseases, 536.
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„ Caste.
„ Habits.
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„ Race.
„ Religion.
„ Sex.

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Attitude towards Disinfection by Quicklime:

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Chloride of Lime:

Chloride of lime, best in powder, 1226.
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Efficacy of Quicklime as a Disinfectant:

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Doubtful whether whitewashing is a sufficient precaution against plague, II. 6.
Lime-washing for disinfecting purposes of very little use in India, 8689.
Lime-washing apparently ineffective as disinfecting method, 1214.
Lime-washing alone insufficient, 10,972.
Result of tests with quicklime, II. 6.

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Ahmedabad: Lime-washing used as disinfectant, 13,923.
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Baroda: Uninfected houses cleaned and white-washed in, as disinfecting precaution, 14,631.
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 Panjab: Whitewashing done with unslaked lime 30 per cent. strength, to disinfect, 10,034.
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 Liver in bubonic plague somewhat large and congested, 10,421.

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LUNG:*Clinical Features of Plague:*

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 Pneumonic plague: Hæmorrhage from the lungs without the characteristic signs of pneumonia, 12,897.
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MAHAMARI AND SANJAR :*Arranged under the following subheads :*

- Air and Mahamari.
- Bodies of Persons dead of, Disposal of.
- Buboes in Mahamari.
- Character and Clinical Symptoms of.
- Climatic Conditions and Mahamari.
- Description of Kumaun and Garhwal.
- Difference between Mahamari and Sanjar.
- Endemicity of Mahamari.
- Enquiries regarding Mahamari.
- Epidemic Diseases in Kumaun and Garhwal other than Mahamari and Sanjar.
- Food and Grain and Mahamari.
- Habits of the People of Kumaun and Garhwal.
- Immunity of particular Places and Persons from Mahamari.
- Importation of Mahamari into Kumaun and Garhwal.
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- India, Communication of Mahamari to, from Kumaun and Garhwal.
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- Opinions regarding the Nature and Character of Mahamari and Sanjar.
- Outbreaks of, History and Continuity of.
- Personal Communication of Mahamari.
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- Rats and Mahamari.
- Recrudescences of Mahamari.
- Sanitary Conditions and Mahamari.
- Snakes and Mahamari.
- Soil and Mahamari.

Air and Mahamari :

- The fact that it is not generally prevalent shows that the disease is not carried by the air, App. XXV., sect. 246.

Bodies of Persons dead of, Disposal of :

- Corpse eaten by jackals, 26,603.
- Mahamari dead not buried, but left to be pulled about and eaten by jackals, II. 338.
- Remarks on the scattering of the germs of the disease owing to the non-burial of the bodies of those who have died of mahamari, App. XXV., sect. 251.

Buboes in Mahamari :

- Buboes not noticed in those who died quickly at the onset of the epidemic in Bintola, and noticed only at a later stage of the outbreak, II. 338.
- First three cases of the 1897 outbreak in Semi had no buboes, II. 370 (1).
- In 1897, in Sankari, buboes appeared in one case only out of five, II. 371 (3).
- No swellings in large number of cases that occurred in Bhandargaon, App. XXV., sect. 182.

Character and Clinical Symptoms of :

- Delirium and wandering about, 26,587
- In 1834 symptoms, onset sudden, fever, thirst, desire to eat bitter things, buboes followed by choleraic symptoms, App. XXV., sect. 95.

MAHAMARI AND SANJAR—cont.

- In 1849 symptoms noted, fever, contagiousness; swellings, with crisis on the third day, App. XXV sect. 96.
- Instances of plague with vomiting, II. 364 (19).
- No petechiæ noticed in 1876-77, App. XXV. sect. 240.
- Summary of clinical symptoms observed by Dr Planck in 1876-77, App. XXV., sect. 242.
- Summary of the symptoms of mahamari (Douglas and Walton), II. 369 (8c).
- Surkali, 1893, symptoms described, II. 368.
- Suffusion of conjunctivæ, 26,586.
- Symptoms high temperature, quick pulse, early death, 26,585.

Climatic Conditions and Mahamari :

- Disappears in the hot weather, II. 363 (6).
- Mahamari breaks out in the cold weather in damp places, when the people crowd together, 8827, 8995.
- Mahamari occurs in hot weather, cold weather, snow, and rains, 6166.
- Rainfall, soil, temperature, and elevation vary greatly in different parts of the affected tract, II. 366.

Description of Kumaun and Garhwal :

- Description of Garhwal and Kumaun, II. 366.

Difference between Mahamari and Sanjar :

- Colonel Thompson thinks that both mahamari and sanjar are the same disease, sanjar being a less infectious and less fatal; one may merge into the other, 8825-6, 8966.
- Decline of mahamari to sanjar not noted as mahamari when discovered is stamped out, 8996-7.
- Early delirium, fever, and contagiousness noticed in both sanjar and mahamari, 8953.
- Instance of epidemic of mahamari and sanjar, side by side, 8894-5.
- Mahamari same as plague in the plains, sanjar with no glandular swellings, 8823, 8901, 8960-1.
- Not infrequent for disease never to pass beyond the sanjar state, 8967-8.
- People consider mahamari and sanjar the same disease, 8824.
- People differentiate between sanjar and mahamari by the appearance of buboes, 26,604.
- People do not think that sanjar develops into mahamari, 26,604-5, 26,631-4.
- Rats die before mahamari but not before sanjar, 8827, 8896-9.
- Sanjar, a severe fever, only recognised as such when its infectiousness becomes apparent, 8953, 8827.
- Sanjar has all the symptoms of plague, except buboes, and is milder than ordinary mild plague, 8902, 8946, 8827.
- There may be half a dozen cases of sanjar before a man dies with buboes and mahamari is recognised, 8953.

Endemicity of Mahamari :

- Endemic in Garhwal, probably for centuries, 26,575.
- Evidence in Kumaun and Garhwal, 1558.
- Familiarity with, and general knowledge of, the Native names for the disease a proof that it has probably been known in Kumaun for a long time, and probably before 1823, App. XXV., sect. 245.
- Mahamari occurs in all parts of Kumaun, 6157.
- People spoke of mahamari as a familiar thing, 26,615.

Enquiries regarding Mahamari :

- Enquiry in 1899 by Lieutenant Walton, I.M.S., and Lieutenant Douglas, I.M.S., under orders of Indian Plague Commission, II. 365-373.
- In 1850, Dr. Renny made a report after special investigation and seeing cases, App. XXV., sect. 98.
- In 1851, Dr. Pearson and Assistant Surgeon Mukerji investigated the disease, App. XXV., sect. 101.
- In 1852, Dr. Pearson and Assistant Surgeon Mukerji made another investigation, App. XXV., sect. 102.
- In 1852-53 an investigation was made by Drs. Pearson and Francis, App. XXV., sect. 103.

MAHAMARI AND SANJAR—cont.

In 1877, an enquiry was made by Dr. Planck, who visited 40 mahamari villages, and submitted a full report on them, II. 337-364.
No bacteriological facts ascertained up to the present, 8904, II. 365.

Epidemic Diseases in Kumaun and Garhwal other than Mahamari and Sanjar:

Besides mahamari and sanjar there are no special epidemic diseases in Kumaun and Garhwal, 368 (6b).

Food and Grain and Mahamari:

Grain not the cause of infection, App. XXV., sect. 254.

Grain the cause of the disease because rats, mice, and snakes die, II. 362 (4), II. 363 (11).

Mahamari imported into Surkali by grain dealers II. 368.

No connexion between the disease and food grains, as people who take their grain with them into the jungles remain free after evacuating their villages, 8831.

Not due to grain, 26,588.

People believe that food will carry the infection; in one case the only person attacked among evacuated villagers was a boy who went back to the infected village and got some coarse sugar from it, 8832.

Possible cases of infection by grain in 1877, App. XXV., sects. 120, 130, 218.

Possible cases of infection through ghi and grain in 1877, App. XXV., sects. 159, 165.

Possible case of infection in 1877 through ghi, App. XXV., sect. 233.

Habits of the People of Kumaun and Garhwal:

People dirty and never wash, 6103-9.

People do not wear shoes, 26,573.

People never wash themselves, thinking that dirt is a preventive of mahamari, and they also have cuts on their feet frequently, 8832.

Immunity of particular Places and Persons from Mahamari:

Dasauli: Though surrounded by affected tracts, has remained immune, except for a small outbreak in two villages in 1864, II. 366.

Kidarnath: Pilgrims have never had mahamari, II. 366.

Pilgrims immune, II. 363 (15).

Two tracts close by two tracts that suffered extremely escaped, II. 364 (18).

Villagers remain free near certain villages in which the disease recurs, 8827.

Importation of Mahamari into Kumaun and Garhwal:

Before coming over into Garhwal, Thibetans make special enquiries about the existence of mahamari, and take precautions against it, II. 369 (d):

Importation improbable, 26,617-8.

No mahamari heard of in Thibet, II. 369 (d).

Possible importation from Yunnan by communication with countries north of the Himalayas, 26,574.

Suggested existence in Nepal and importation thence, but not known in parts of Garhwal near Nepal, II. 369 (d).

Villages at foot of Mana and Niti passes have never had mahamari, II. 366.

Villages on trade route to and near Thibet have no mahamari, II. 369 (d).

Inubation Period of Mahamari:

Incubation period less than 24 hours, II. 362 (3).

Incubation short in both mahamari and sanjar, 8827.

India, Communication of Mahamari to, from Kumaun and Garhwal:

About 50 years ago the disease was introduced from the Hills into Bijunur and Morudabad, 8836.

Communications are bad, the trade small, and the disease is usually found to occur several days' march from the plains, 8834.

Infection not imported from Kumaun to Hardwar, 8765, 6185.

Inter-communication with India slow and difficult, II. 370.

MAHAMARI AND SANJAR—cont.

Introduction from Okhimath into Bombay very improbable, 8836.

Mahamari was once imported from the Hills to the plains, 6181-2.

The only danger from pilgrims and from the Panda Brahmans of the hills who pass the winter in India, II. 370.

See also Introduction of Plague into Bombay.

Locality and Mahamari:

Cause of disease lies in the houses, as a child or woman generally suffered first, 26,575, II. 360 (250).

Chuni, 1895, a case was attacked in the jungle, after the people had left the village, II. 371 (4).

Contracted by visits to mahamari houses, II. 369 (6c).

Disease contracted by return to houses vacated, 26,576.

In Balt all remained well until a fall of snow drove the people, after evacuation, back to their houses, when the disease re-appeared, II. 339.

Infection kept alive by visits to infected houses, App. XXV., sect. 263.

Infection most potent in the house in which a case has occurred, less so in the open air, App. XXV., sect. 261.

In many cases the disease is restricted to localities or houses, App. XXV., sect. 247.

Semi, 1897, all five cases were of people belonging to one house, II. 371 (3).

Suni outbreak, 1893, two cases directly due to return to infected houses, II. 368.

Measures, Precautions, and Rules relating to Mahamari in Kumaun and Garhwal:

Concealment for any long time impossible, and villagers take steps to guard themselves, 8834.

Most important measure is improved sanitation, during periods of attention to sanitation, outbreaks were few, II. 361 (256).

No person of an infected village dares to pass into an uninfected village, II. 339; II. 341.

People favour the burning of mahamari houses, 26,576.

Rules prescribed by Government for dealing with mahamari, 8836-41; II. 338 (104-5); II. 377.

Villagers evacuate their villages on the death of rats, 8839-40.

Mild Forms of Mahamari and Sanjar:

Dr. Planck knows no epidemic with low mortality, 26,589.

Mild cases few, 26,581.

Neither sanjar nor mahamari patients can walk about, 8902-5.

No evidence of existence of less fatal and atypical forms, II. 369 (6c).

Sanjar milder than ordinary mild plague, 8827, 8902, 8946.

Monkeys and Mahamari:

Chuni, 1895, monkeys swarm, but none sickened, 371 (4).

Mortality from Mahamari and Sanjar:

Case mortality very high, II. 369 (6c).

Extremely fatal: in one instance two houses affected, and all inmates died, in one house five, and in the other six, 6193.

In 1834, fatal termination in 3 to 4 days, App. XXV., sect. 95.

In 1850, Dr. Renny found that the disease was usually fatal in from 3 to 4 days, II. 336.

In 1876-77, in 291 cases, case mortality 95 per cent., App. XXV., sect. 244.

Mortality in an outbreak of mahamari 75 per cent., 8903.

Mortality in an outbreak of sanjar 20 per cent., 8900, 8962.

Sanjar fatal, as a rule, in a week or ten days, 8948-9.

Native Names for Mahamari:

Disease called mahamari, golarog, and phutkiorog, II. 368 (6).

Name sanjar includes relapsing fever, II. 368 (6).

Native names for plague, 26,588.

Mahamari is called by the people golarog, 8944.

MAHAMARI AND SANJAR—cont.

Sanjar means an epidemic in which the mortality is slight, II. 368 (6).

Sanjar means the infectious disease, 8943.

Opinions regarding the Nature and Character of Mahamari and Sanjar :

An epidemic of sanjar found to be relapsing fever, the diagnosis being confirmed by an examination of the blood, II. 368 (6).

Dr. Pearson and Assistant Surgeon Mukerji, in 1851, thought that mahamari was typhus fever, App. XXV., sect. 101.

In 1850, Dr. Benny thought the disease was not plague, but malignant typhus with buboes, the appearance of which was an unfavourable sign, II. 336.

In 1852, Dr. Pearson and Assistant Surgeon Mukerji came to the opinion that mahamari was plague, App. XXV., sect. 102.

In 1852-53, Drs. Pearson and Francis reported mahamari to be plague, App. XXV., sect. 103.

Mahamari is true plague (Planck), 26,573.

No skin eruption in sanjar, which has been wrongly called typhus, 8957-9.

Sanjar is ordinary infective fever, 26,602.

Sanjar the same thing as plague, but less fatal, App. XXV., sect. 253.

Summary of previous opinions regarding nature of mahamari, II. 368 (5).

Symptoms differentiate mahamari from typhoid, II. 362 (1).

Walton and Douglas think mahamari identical with plague, II. 369 (6c).

Outbreaks of, History and Continuity of :

Between 1870 and 1897 outbreaks not traced only in 1872, 1880, 1881, 1889, and 1890, II. 370.

Case at Okhimat in August 1896, 10 marches from the plains, and after the Bombay plague began; no case in 1897 or 1898, 8842, 8835.

Disease said to have existed for 30 years before an outbreak which occurred in 1849; more prominent outbreaks before that date enumerated, App. XXV., sect. 97.

History of the disease in 40 villages in 1876-77, II. 337-53.

In recent times restricted outbreaks have been noted every year, 8836.

Mahamari has occurred frequently since 1832, 6167.

Mahamari noticed in 1834, and then said to have originated in 1823 on account of the anger of the gods at certain mistakes committed in ritual, App. XXV., sect. 95.

Mention of all outbreaks not made in official reports; limited outbreaks easily overlooked, II. 369 (e).

Most recent outbreak in Phali, Semi, Ukhimath, and Sarkari in 1896-97, II. 365.

No mahamari in 1897 or 1898, 8842.

Outbreak at Okhimath on 26th August 1896, 8835. Outbreaks confined to small and isolated areas, II. 370.

Outbreaks more frequent than would appear from the records, II. 359 (d).

Supervision over the tract not sufficient to allow it to be said whether or not there are long periods without outbreaks, 6187.

Personal Communication of Mahamari :

Almost certain death to sleep in same room as a patient, II. 363.

Instances in which the disease could be proved in 1876-77 to have spread by personal communication summarised by Dr. Planck, App. XXV., 248.

Pneumonia and Mahamari :

Pneumonic plague not heard of in the Hills, 8833, 8955.

Post-mortem appearances of Mahamari :

Post-mortem appearances recorded in 1852-53, App. XXV., sect. 103.

Rats and Mahamari :

Rintola, 1876-77, many rats die, II. 330, sect. 118.

Chuni, 1895, dead rats seen, II., 371 (4).

Dead and dying rats a feature of the outbreaks inquired into by Walton and Douglas, II. 369 (6c).

MAHAMARI AND SANJAR—cont.

Dead rats observed in 1876, 26,607.

Death of rats observed in 1876-7, App. XXV., sects. 159, 164, 169, 175, 190; II. 362 (4).

Death of rats occurs in recrudescences, not when the disease is imported, App. XXV., sect. 259.

Death of rats precedes recrudescence, but not importation, II. 363 (9).

Grey rats die before a recrudescence, but not before an importation, 26,578.

In 1834 mortality among rats preceded outbreak, App. XXV., sect. 95.

Mortality among rats occurs, 6171-2.

Rats died in Phali in 1896, II. 367, II. 370 (2).

Rats said to die of mahamari, 8827.

Summary of histories of deaths of rats in 1876-77, App. XXV., sects. 254, 259.

Sarkali, 1893, dead rats seen, II. 368.

Recrudescences of Mahamari :

Chuni, attacked 1895, has had two outbreaks, II. 371 (4).

Disease may break out again after several years; certain tracts more liable than others, 8827.

Phali, where disease reappeared in 1896, has had two outbreaks, II. 367.

Possible case of recrudescence in the same house after 16 years, App. XXV., sect. 179.

Sankari, infected 1897, has had two outbreaks, II. 370 (1).

Semi, infected in 1897, has had three outbreaks, II. 367.

Sarkali, infected 1893, has had two outbreaks II. 368.

Tendency noticed of disease to start in houses of great age, App. XXV., sect. 261.

Sanitary Conditions and Mahamari :

Halting places on pilgrim routes more foul and dirty than the ordinary houses of the people, but the pilgrim routes have never had mahamari, II. 366.

In 1852-53, Drs. Pearson and Francis thought mahamari to be due to insanitary conditions, and steps were taken to improve the sanitation of the houses in the hills, II. 336.

Insanitary condition of houses, 26,611, 26,631 II. 335, II. 346, II. 363, II. 366.

Insanitary conditions the cause of the germs becoming active again when they get into the bodies of debilitated persons, App. XXV., sect. 252.

Snakes and Mahamari :

Death of snakes from mahamari noticed in 1876-77, App. XXV., sect. 190.

Question whether snakes die of mahamari, App. XXV., sect. 254.

Snakes said to die of mahamari, 8827.

Soil and Mahamari :

People believe the infection to lie in the soil, 8832.

MAHARS :

Mahars and other outcasts escaped infection in infected areas even when not evacuated, 24,051.

Mahars live an outdoor life, 24,054-7.

Plague spread by the Mahars, 15,337.

MANGS :

Mangs not much subject to plague; impure people, 5478, 5556.

Mangs remained comparatively free, 24,004.

MAPS AND CHARTS :**Clinical Charts of Plague Cases :**

Clinical chart of Atit Bawa (plague patient, Cutch Mandvi), II. 471.

Clinical chart of Chinaman landed at Bombay with plague from s.s. "Bormida" from Hong Kong, III. 303.

Clinical chart of Ibrar Hussain (plague patient, Jawalapur), II. 387.

Clinical charts of plague cases, I. 385-390

Clinical charts of 13 plague cases, Arthur Road Hospital, Bombay, III. 529-545.

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MAPS AND CHARTS—cont.

Clinical Charts of Plague after Inoculation with Haffkine's Plague Prophylactic:

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Hardwar : First detection of plague on 8th April 1897, 8761.
Hardwar : First case detected in a lodging-house frequented by Sindis, where there had been illness for a month before date of detection, 9025.
Hardwar : Importation into lodging-house where first case found probable by people from Sind, 9028.
Hardwar : Existence of plague probable for some time before its detection, 8761, 8764, 9028.
Hardwar : Importation in bags of bones sent by post from Karachi suggested, 9456-8.
Hardwar : Importation in clothes by people from Sind suggested, 6435.
Hardwar : Importation by person suffering from plague or carrying the virus in his clothes suggested, 8911.
Hardwar : Probability of importation of infection from Sind in a manner which could not be traced, 9027.
Hardwar : Statement of the plague cases that occurred at Hardwar, 9064.
Hardwar : List and details of cases, II. 39.
Hardwar : No arrangements possible to prevent inter-communication between Hardwar and Kankhal, 8782.
Hardwar : Cases in spring 1898 imported from Jawalapur, but without spread of disease, 9059.
Jagjitpur : No data to account for the outbreak at, 9137.
Jagjitpur : Suggested conveyance of plague from Kankhal by monkeys, 9363.
Jamalpur : First case daughter of a man who had been to Jawalapur to buy grain, 9150-4.
Jamalpur : History of epidemic and list of cases, 9155-72.
Jawalapur : Jawalapur much more densely populated than Kankhal or Hardwar, 9018.
Jawalapur : Impossibility of tracing the source of infection, 9173.
Jawalapur : List of plague cases, II. 45-8, (9178).
Jawalapur : List of the first 12 cases, with references to the position of the houses in which they occurred, II. 539.
Kankhal : After epidemic ceased a few cases imported from Jawalapur, 9226.
Kankhal : Case of Kisham Ram probable cause of outbreak at Kankhal, 8767, 9066-9.
Kankhal : First cases occurred among the Acharaj, 9458.
Kankhal : List of 61 cases with remarks, II. 42-3.
Kankhal : Notes on the most interesting cases during the outbreak, II. 40.
Kankhal : Rats died in June, but no verified cases till September, 9072-3.
Kankhal : Mortality among monkeys, and measures taken to deal with these animals, 8739-45, 8778-9, 9119-28.
Population and situation of Hardwar, Kankhal, and Jawalapur, 9003, 9016, 9018, 9212.
Villages attacked near Hardwar, 9133.

NOTIFICATION OF DISEASE :*Notification of Sickness at Poona :*

All cases of sickness notified to medical officer in charge of a ward, 21,333-5, 21,341-4, 21,528, 21,772.

NOTIFICATION OF DISEASE—cont.

Cases detected by corpse inspection not seen before death, 21,444-5, 21,477-84.
Corpse inspection most useful, but sick visitation cannot be dispensed with, 21,382-8.
Failure to report not punished, but persons who report granted concessions in the matter of segregation, 21,557-60, 21,884-6.
Half the cases notified by the people themselves; half notified by volunteer search parties, 21,348-52.
Half the people who are sick do not report themselves, 21,451-7.
Means of information regarding cases not seen in life, and first detected by corpse inspection. Medical officers of wards do not visit cases of sickness reported by native doctors, 21,984-999.
Medical officers do not attend during the night, but go as soon as possible to examine cases of sickness reported, 21,336-9.
Most of the corpses seen in corpse inspection have been seen under sick notification rules when alive, 21,353-5.
No penalty for not reporting sickness, 21,425.
Number of cases of plague detected by sick notification, and the advantages of the system, 21,887-901.
Number of cases reported by relatives, doctors, and volunteers, 21,872-83.
Number of plague cases detected by sick visitation, 21,377-81.
People notified sickness willingly, and had no objection to their women being seen, 19,930-3.
People ready to report, and most cases of sickness reported, 21,595-604.
People report the majority of cases of sickness, 21,513-7.
People willing to report sickness, but in many cases death takes place too quickly to enable them to do so, 25,842-3.
Two-thirds of cases seen in corpse inspection not seen by any doctors during life, 22,007.
Very few cases in which examination of the sick has been objected to, 21,340.
When plague was rare only diagnosis was whether the case was one of plague or not; afterwards the disease from which the sick person was suffering was diagnosed, 21,346-7.

Opinions and Recommendations regarding :

Agency for, very unreliable in India, no one compelled to send in a report except in the municipalities, 6083.
Cannot be accurate without enormous increase of qualified practitioners, 7792.
Employment of Assistant Surgeons, but not of Hospital Assistants, in the Sanitary Department would improve notification of disease, 3954-83.
Employment of Assistant Surgeons or Hospital Assistants in the Sanitary Department would probably improve notification of disease, 23,303.
Law of notification of contagious diseases as it is carried out in England would be impossible in India, 21,855.
Notification of diseases should be made compulsory, 17,747.
Notification of sickness not possible, as at present 90 per cent. of the people die without being seen by a doctor, 21,856.
Special forms of reports of sickness recommended, 23,298.
Voluntary system of registration of sickness should be established in Bombay and other large places, 10,990.
See Medical Treatment, European : Attitude towards, in general.
" Native practitioners.
" Voluntary agency.

Systems of :

Ahmedabad : No regular system of notification of diseases, 13,873.
Bombay Presidency : Notification of deaths not general; chiefly a matter of police, 17,229.
Calcutta : Supposed to be compulsory; not effective, 6506.

NOTIFICATION OF DISEASE—*cont.*

- Cholera promptly notified, 7818.
 Dharwar: System of notification of deaths, 1323-40.
 Headman of village only means of information of deaths and sickness for rural areas, 22,959.
 Municipalities: Penalty for the non-notification of disease never enforced, 23,311.
 No notification law in India, 6089.
 No system of notification of infectious disease in Bombay, 17,228.

NOTIFICATION OF PLAGUE:

Attitude towards:

- Bombay: Cases not notified owing to difficulty of recognising plague, 1050.
 Dharwar: No information to be obtained, 6133.
 Difficulty of getting information owing to the temper of the people, 7598.
 Errors in notifying plague in rural district owing to the difficulty of recognising the disease, 23,289.
 Hubli: Cases notified mainly after death, 19,836.
 N.W.P.: Cases not reported from sheer ignorance, people failing to recognise plague, 8867.
 Objection to plague measures so great that people will not report cases, 7824.
 Surat: Compulsory declaration of plague easily evaded, 15,582.

Early Notification, Importance of:

- Early notifications impossible in India without very large increase of the existing machinery, 10,499.
 Early notification most important, 10,497.
 Early notification of primary importance, 22,945.
 Early notification the most important thing, I, 408.
 First cases rarely come to official notice anywhere.
 N.W. Provinces: Prompt reporting of cases the object of some of the plague regulations in the N.W. Provinces, 8749.
 Panjab: Early notification of disease encouraged by a system of rewards and punishments, 10,826.

Efficient Notification secured:

- Belgaum: The fear of Government measures being removed, people willingly give notification of plague, 23,138.
 Bombay: In some of the districts in Bombay people voluntarily notify plague, 17,868.
 Enemies of patients give information of cases, 6598.
 Hyderabad (Sind): People give early notification of cases, 18,394.
 Karachi (Kiamari division): Ready reporting of plague cases by people, 11,980.
 Ready compliance with orders for notification the results of former experience, 24,519.
 Sukkur: At first notification not prompt, but improved later, 18,394.
 Surat: Dread of segregation works as pressure on neighbours to give early notification, 16,030.
 Surat: Incumbent on head of family to report sickness within 24 hours, 15,836, 16,030.
 Surat: Concessions regarding disinfection and segregation induced people to notify sickness, 15,715, 16,004, 16,031-2, 16,036.

Notification not Efficient:

- Bombay: Mild cases of plague escape notification, 1192.
 Cutch Mandvi: Muhammadans opposed to, 13,581.

Special Rules for Notification of Plague:

- Bombay: Measures adopted to obtain early information of plague and their result, 25,574-617.
 Bulsar: Notification of plague and corpse inspection compulsory, 16,169.
 Calcutta: Native practitioners found to report plague to Plague Officer, 6791-3.

NOTIFICATION OF PLAGUE—*cont.*

- Calcutta: Under plague regulations all cases to be reported, under penalty, 6791.
 Cutch Mandvi: Penalty of fine imposed for neglecting to report cases, 13,552.
 Palanpur: System introduced in the villages ensured daily reports and early information of all sickness and deaths, 13,128.
 Rohri: Notification of all fever made compulsory, 12,026.

NUTRIENT MEDIUM IN HAFKINE'S PLAGUE PROPHYLACTIC.

See Haffkine's plague prophylactic, character and preparation and constituents of.

OBSERVATION CIRCLES:

- Inspectors visit every village in Madras observation circles once a week, 3954-5.
 Madras: General rule that no one shall be detained more than 10 days, 3961.
 Observation system in Madras obtains prompt discovery of cases, 3881.
 Observation circles on Madras frontier, I, 145-9.
 Observation circles 10 miles drawn in double rows along Madras frontier, 3865.
 Observation system of Madras unique as regards rural areas, 3916.
 People arriving within the circles in Madras report themselves for 10 days; few omissions, 3929-35.
 Village headmen bound to question and report persons arriving in Madras observation circles and without pass, 3946.
 Where plague has broken out, number of Madras observation circles increased and their area contracted to five miles diameter, 3947.
See Surveillance.

OCCUPATIONS:

Influence of Occupation on Liability to Plague:

- Incidence of plague on various occupations at Bombay, I, 392-3.
 Karachi: One thousand seven hundred and five cases of plague classified according to the occupation of the sufferers, 11,727.
 Preponderance of plague cases in men due to their occupations exposing them more to infection, 12,349.

See Achary,

- .. Banniahs and Traders.
 .. Corps bearers.
 .. Dhobis.
 .. Disinfectors.
 .. Domes.
 .. Scavengers.

Influence of Outdoor Life on Liability of Plague:

- Beggars at Satara, living all day in the open air, escaped plague, 22,267.
 Bhils suffered little on account of their leading an open air life and residing on the outskirts of the town, 11,246.
 Herdsmen and shepherds have almost a perfect immunity, 5473.
 Open air life and occupation of people living in fishing villages near Karachi keep them free from plague, 12,278-86.
 Outdoor occupations do not make people less liable to plague. Instance, the people at Salaya, 13,476.
 People working in air all day and sleeping out all night have few cases, 17,711.
 Rice cultivators at Satara, living and working in the open, escaped infection, 22,127, 22,184.
 Waghri and gypsies live in grass huts outside Cutch Mandvi and suffered little from plague, 13,480.

See Air and light.

CEDEMA:

Clinical Feature of Plague:

- Common symptom in the lungs in pneumonic plague, generally observed on third day of illness, 20,823.

ŒDEMA—cont.

- Never observed œdema on the chest with pneumonic plague, but in many cases of inguinal and axillary bubonic plague, 27,179.
- No œdema at the anterior portion of the body observed in plague patients in the hospital at Ammedabad, 13,944.
- No exceptional œdema of the thorax or abdomen noticed in patients in the Sassoon Hospital, 12,924-5.
- Œdema never seen confined to the anterior part of the body, 12,407.
- Œdema of the surface very rare, 12,403.
- Several cases of œdema on the anterior and posterior wall of the body, 18,049.

In Animals:

- Œdema on front of trunk noted in three monkeys died of plague, 9577.

Post-mortem Appearances:

- Doubt, till bacteriological examination, whether case with œdema was plague or not, 9552-3.
- No œdema in the anterior wall of the chest after death from pneumonic plague, 15,926, 18,158-61, 20,021.
- No œdema of the surface either before or after death, 18,557.
- No œdema in plague corpses except in contiguity of buboes, 10,843.
- No œdema in cases of exclusively inguinal buboes, 10,347.
- No œdema in front of thorax and abdomen seen independent of buboes on neck, 10,379-83.
- No œdema observed at post-mortem in cases of pneumonic plague, 8669, 9891.
- Œdema never observed in the subcutaneous tissues at the front of the body, 10,424-9.
- Œdema of the thoracic surface invariably observed at post-mortems, but never in face, hands, or feet, 9544-9.
- Œdema observed in several cases of pneumonic plague, 10,346.
- Œdema of the chest and upper limbs very common after death, 10,345.
- Œdema occurring in the last hours of life never observed in autopsies other than plague, 9546.

OPIUM:

- Immunity from plague of opium smokers and eaters, III. 43.

ORIGIN OF PLAGUE, THEORIES REGARDING:

- Mr. Davur's theory of the origin, spread, and treatment of plague, III. 42-5.
- Mr. Desai's theory of the origin of plague, 14,767.
- Mr. Ghadiali's theory that plague is merely the child of other causes more powerful than the simple bacillus of plague, 24,935.
- Opinion that the plague bacillus does not originate plague, but is merely a symptom of the disease, 8314.
- Prof. Gajjar's theory of the origin and causes of plague, 13,622-49.

OTHER DISEASES:

- Decrease in malarial fever during plague, 12,993, 16,305-7.
- See Inoculation with Haffkine's plague prophylactic.

OVER-CROWDING:**Existing Conditions:**

- Ahmedabad: Very much over-crowded, 100 persons to the square acre in, 13,938.
- Bangalore: Much over-crowded: some divisions contain a population of 8,000, while there is only room for 3,000, 2,500.
- Bombay: Average population of rooms in Bombay, 5 persons; Muhammadan quarters less over-crowded, 844.
- Bombay: Density of population varies from 7 square yards to each person to over 800 square yards in the extreme suburbs, Bombay, 25,874.

OVER-CROWDING—cont.

- Bombay: Excessive over-crowding and dirt in the chawls, 16,985, 17,711.
- Bombay: Houses in Bombay contain several families of outcasts in one room, 833.
- Bombay: In one chawl 2,000 to 2,500 persons in 300 rooms, 17,289.
- Bombay: Kamatipura: Houses low and badly ventilated as well as over-crowded, 17,834.
- Bombay: Mandvi: Houses large and well-ventilated, but much over-crowded, 17,934.
- Bombay: Muhammadan quarters less over-crowded, 844.
- Bombay: Outcasts living in Moorland Road in very crowded rooms, under conditions favourable to plague, 25,784.
- Bombay: Over-crowding in Bombay a blot on its municipal system, 17,688.
- Bombay: Over-crowding in Bombay, new municipal regulations, 133, 878.
- Bombay: Over-crowding in the suburbs not so bad as in the town, 25,677.
- Bombay: Over-crowding worse than any seen anywhere else, 26,644-5.
- Bombay: Statistics regarding density of population, 883, 25,667.
- Calcutta: Bustees occupied by 200 people or more, 7707.
- Calcutta: Great overcrowding in parts, 6861.
- Cutch Mandvi: Very much congested even in ordinary times, 13,349.
- Hardwar: Inspection of lodging-houses very strictly carried out and number of occupiers limited, 9007.
- Hinganghat: Over-crowding, but no worse than in other parts of India, 6278.
- Hubli: No remarkable over-crowding, 20,209.
- Karachi: Over-crowding exists to a terrible extent, especially among the weavers, 22,649.
- Nasik and Malegaon: Over-crowding a tendency of the poorer classes, 13,785.
- Nasik: Not much over-crowded, 16,979-84.
- Surat: Houses of Golas, who suffered most, over-crowded, 16,107-8.

Improvement of Conditions of Over-crowding:

- Bangalore: Over-crowding to be limited by law, 3265.
- Bombay: Lord Sandhurst's scheme for the restriction of over-crowding highly approved, 17,688.

Influence of Over-crowding on Plague:

- Ahmedabad: Plague worst where crowding least, though houses bad, 13,963-85, 13,990-1.
- Bangalore: Relationship of over-crowding to mortality, 2590.
- Bombay: Epidemic in Bombay increasing during cold weather owing to the people sleeping more indoors, 26,104.
- Bombay: More sparsely populated districts of Bombay City most severely attacked, 8707.
- Bombay: Mortality from plague in the most densely populated portions of Bombay less than in small villages in the suburbs, 25,675.
- Bombay: Mortality in the sanitary Byculla Jail greater than in some over-crowded chawls, 25,682.
- Bombay: Suburbs attacked have old houses and were crowded at time of attack, 25,690-8.
- General vitiation of the air by over-crowding, &c., the predisposing conditions to plague, 17,354.
- Great difference in the intensity of plague in ill-ventilated, over-crowded houses and well-ventilated houses, 14,390-1.
- Karachi: Fishing villages close to Karachi where people live in open air and huts not over-crowded remained free, 12,279.
- Karachi suffered most in the over-crowded weaver quarter, 22,649.
- Northerly and easterly winds, by causing over-crowding, have an unfavourable influence on mortality in Bombay, 26,103.
- Over-crowding and bad ventilation the causes of the disease, 14,716.
- Over-crowding and plague diminished in the hot weather because the people sleep out of doors, 14,385.

OVER-CROWDING—*cont.*

- Over-crowding, lowering of the vitality, habitual disregard of hygienic rules cause plague, 25,263.
 Over-crowding principal factor in the propagation of the disease, 14,388.
 Over-crowding the great question in Bombay in connexion with plague, 17,688.
 Virulence and extension of disease dependent upon dirt, over-crowding, &c., 11,281.
 Worst cases of plague in over-crowded houses, 11,228.
See Hoising.

OXYDISING AGENTS:

- Microbe resistant to reducing agents, sensitive to the action of oxydising agents, 8551, II. 8-10, 13.

PASS SYSTEM:

- Bandra: Abandonment of the pass system and of inspection led to the introduction of plague in, 19,431.
 Bangalore: Passengers forbidden to leave without pass, 2586.
 Bangalore: Pass system failed; unworkable without enormous staff, 2641-3.
 Baroda: Pass system very carelessly administered, 18,614-7.
 Belgium: Native resident plague authority distributed passes to villages in the district in, 23,000.
 Bellary district: Valuable, 4934.
 Billimora: Passes given to the uninoculated if no plague had occurred in their houses or streets, 15,066.
 Daman: Frontier pass system, 15,066.
 Dharwar: Pass system in force, 19,832.
 Hubli: At one time no one could leave the town by rail or road without a pass, 19,812-6.
 Hubli: Passes for travel by road or rail given only to persons having twice inoculation certificates dated 10 days previous to issue of pass, 3159.
 Hubli: Pass system practically useless, as far as the road was concerned, 19,825.
 Jalgaon: Pass system and patrolling roads failed to check spreading of plague by refugees, 25,544-6.
 Karachi: No one allowed to change residence at Karachi without pass from plague superintendent, 12,277.
 Karachi: People allowed to leave the place on passes, 3778-9.
 Kotri: System of passes, 12,620.
 Madras frontier, I. 145-9.
 Madras: Headman of village notified of arrivals, 3929.
 Madras: No complaints of blackmail, 3956.
 Madras: One hundred and fourteen out of 5,500 with passports do not present themselves, 4224.
 Madras: Pass system deficient at first, now working smoothly, 4236.
 Madras: Statistics of evasion of pass system, 3870.
 Madras: Very few evasions and little dislocation of trade, 3867.
 Madras: Works well, 3866.
 No special passes given to people travelling with large families, 12,222.
 N.W.P.: Pass system adopted in, 9337.
 Panjab: System of passes, 10,069.
 Panjab: People allowed to leave infected places after spending 10 days in quarantine camp, 10,258.
 Surat: Passes insisted on to prevent people leaving the place and spreading plague, 24,426-7, 24,461-3.
 System of passes worked better with the village people than with the town people, 13,653.
 Under the passport system people have to present themselves at one of the district offices for 10 days after they arrive in town, 4234.
See Camps.

PERCHLORIDE OF MERCURY:

Action on the Bacillus of Plague:

- An absolutely effective disinfectant if used properly, 10,930.
 Bacillus in infected floors survives the application of disinfectants, 5159.

PERCHLORIDE OF MERCURY—*cont.*

- Cow-dung: Perchloride of mercury, details of experiments with, in acid solution on, 18,828-63.
 Eight gallons of the 1 in 725 Bombay solution would be required to vitally damage the plague microbe at the surface of a 100 square feet cow-dung floor, 18,862.
 Experiments showing efficiency in killing plague, 26,347, 26,434A.
 Floor, not affected by 1 in 725 Bombay solution, infective material below, 18,862.
 Floors adequately disinfected by solution of 1 in 500, 26,350.
 Growth of plague bacillus stopped in plague cultures after half an hour's exposure to perchloride of mercury, 1 in 20,000, 26,347.
 Increase in number of microbes, perchloride of mercury in neutral solution led to apparent, 8550, 8579.
 Inert, bacillus of plague not killed, only rendered, 18,653.
 Killed more rapidly in perchloride of mercury than in anything else, 7918.
 Neutral solution led to apparent increase of microbes, but acid solution a reliable disinfectant, 8553-61, 8579-80.
 Results of comparison with nitric peroxide, II. 258.
 Result of tests with metallic salts, II. 6, 18,828.
 Strong disinfecting action, sublimate in an acid solution has a, 8,554, 8561, II. 13.

Attitude of Natives towards use of:

- Better classes averse to disinfection of their houses by perchloride of mercury, 15,495.
 Disinfection by sublimate not objected to, 21,590.
 Natives very sceptical about benefit of perchloride, 22,205.
 Villagers often bribe the coolies to save their clothes from being put in perchloride solution, 21,174-5.

Disadvantages and difficulties connected with the use of:

- Albuminous material is present, loses its disinfectant power, when an, 18,662.
 Brass tubes, disinfecting power destroyed by applying it through fire engines with, 16,137.
 Corrosive action of perchloride of mercury on metals disadvantage to its use as disinfectant, 10,018.
 Expense: Kiln system cheaper than disinfection with perchloride, 19,677.
 Expense: Perchloride of mercury expensive, 13,192.
 Floor: Question whether in practice sufficient quantity of perchloride could be used to properly disinfect, 8578.
 Lime applied every day to the rooms in which patients were left to be treated at home in Bombay, perchloride being applied from time to time on top of the lime, 25,798.
 Lime: Good effects of perchloride of mercury liable to be counteracted by addition of, 20,212.
 Lime: Mixed with, at Guntakal, before application, 5100-8.
 Lime salts contained in many waters throughout India, perchloride solution rendered inert through the, 10,013.
 Limewash neutralises disinfectant effect, mercury and acid upon, 8658.
 Mercurial poisoning, generally not noticed among disinfectors, 10,020, 15,632, 19,939; but said to have occurred in 2 cases from clothes disinfected in perchloride, 16,117, 16,120-32.
 Methylene blue added to perchloride useless for controlling the work of disinfectors upon mud walls, 9997.
 Mud introduced into and weakened the solution in Satara because the coolies would place the pumps used on the ground, 22,323.
 Poona: The native salt procured from the bazar found very impure, 21,305-10.
 Purity of perchloride used in Bombay shown by analysis, 25,535.

PERCHLORIDE OF MERCURY—*cont.**Disinfection, used for :*

- Bangalore: Perchloride of mercury used at, 2698.
 Bombay: Perchloride of mercury chiefly used in strength of 1 in 1000, 911, 940, 1345.
 Calcutta: Perchloride used with small pumps at, 7297, L. 471.
 Calcutta: In acid solution, perchloride of mercury adopted at, 6528.
 Calcutta: Perchloride of mercury adopted instead of carbolic acid at, 6528.
 Calcutta: Mayo Hospital chiefly disinfected with perchloride at, 7022.
 Jawalapur: Disinfection by perchloride used at, 8934.
 Kalindri: Resorted to as disinfectant, 9894.
 Kotri: Disinfection by perchloride, 12,536, 12,562.
 Madras: Perchloride used in, 3937.
 Palanpur: Perchloride resorted to as disinfectant, 13,091-4.
 Panjab: Perchloride first used, but given up for phenyle, 10,016.
 Poona: Perchloride of mercury solely used as disinfectant at, 10,933.
 Rohri: Disinfection by perchloride, 12,029.
 Umreth: Disinfection by acid perchloride still going on, 14,049.
 Use of, prescribed by the Government of India, 7859.

Disinfection of Clothes by :

- Clothes disinfected with perchloride for five or six hours, 1873-4.
 Clothes soaked in perchloride to disinfect, 2707.
 Clothes steeped in perchloride for disinfection at railway stations, 1315.
 Clothing of people detained at Ahmedabad station disinfected by immersion in a solution of perchloride of mercury, 1 in 1,000, to which common salt was added, 13,894.
 Dharwar: Clothing of patients leaving hospital disinfected with perchloride, 1872-4.
 Dharwar: Clothing of persons from infected houses disinfected with perchloride, 2329.
 Lanauli: Clothes disinfected in perchloride, 20,200.
 Perchloride of mercury forced on clothes and houses with Chinese pumps at Dharwar, 2329-32.
 Poona: Acid not used in the solution as all clothes disinfected, and acid spoiled clothes, 10,931.

Disinfection of Houses by :

- Ankleshwar: Houses disinfected with perchloride of mercury in a hydrochloric solution, 14,258.
 Baroda: Perchloride used to disinfect infected houses only, 14,631.
 Bombay: Used in, 911.
 Calcutta: Acid solution used for house disinfection, 6528-31.
 Dharwar: Perchloride forced on houses with Chinese pumps, 2329-32, 2345-50.
 Guntakal: Perchloride applied to roof and walls as disinfectant, 5099, 5100.
 Hardwar: Houses disinfected with perchloride, 9030.
 Karachi: Infected houses, and houses where dead rats had been found, disinfected by perchloride 1 in 1,500 in acid solution, 11,418, 11,647.
 Poona: Perchloride solution used in disinfecting houses from roof to floor, 10,927.
 Satara: Perchloride pumped on to walls, roof, and ceilings, 22,322.
 Surat: Houses opened up, swept out, and doused with perchloride solution, 24,434.
 Surat: Perchloride of mercury used only for infected houses, 16,011.
 Umreth: Golas quarters disinfected by perchloride and kiln burning, 14,037.
 Wardha: Houses saturated with perchloride 6124.

Disinfection of Persons by :

- Patients on leaving hospital at Dharwar disinfected by pouring over them a warm solution of perchloride 1 in 1,000, 1875-6.

PERCHLORIDE OF MERCURY—*cont.*

Persons in Poona camps bathed in perchloride of mercury baths, 19,937.

Efficacy of :

- Belgaum: Thorough disinfection with perchloride stops epidemic at Kagwad, 23,044.
 Carbolic acid given up in favour of perchloride solution, 6528.
 Disinfection with perchloride only so far useful as it cleans out the place and lets in fresh air, 22,864.
 No cases at Ankleshwar from whitewashing houses disinfected with perchloride of mercury, 14,237.
 No cases in Poona in houses disinfected with perchloride on return of people from camps, 10,937.
 Perchloride of mercury most efficacious, 245, 10,930, 13,192.
 Table showing number of plague cases after disinfection of houses with perchloride of mercury and with nitric peroxide, II. 258b.

Inefficacy of :

- Karachi: No effective results of disinfection with perchloride of mercury, 22,658.
 Lanauli: Disinfection with perchloride of mercury under careful supervision ineffectual, 20,184.
 Reliance not placed solely on perchloride of mercury, 570.
 See Recurrence of plague in the same house or locality.

Strength and Mixture in which used :

- Acid not used in Poona on account of its effect on clothes, 10,931.
 Formula of Bombay solution of acid perchloride disinfectant, 18,832.
 Hydrochloric acid used in Calcutta, perchloride of mercury with, 6530.
 Hydrochloric acid used in disinfecting processes at Umreth, perchloride of mercury with, 14,051.
 Hydrochloric acid used instead of common salt to make solution of perchloride of mercury, 14,113.
 Igatpuri: Solution made and used 10 times too weak, 23,317.
 Perchloride of mercury used in solution of 1-1000, 940.
 Strength of disinfectants not always accurately made up in Bombay through press of work, 915.
 Strength of solution not always accurate, 24,450.
 Tests of strength and acidity of perchloride disinfecting mixture used in Bombay, 25,540-7.

PERIOD FOR WHICH INOCULATION AFFORDS PROTECTION.

See Inoculation with Haffkine's plague prophylactic.

PERIOD FOR WHICH PLAGUE BACILLUS CAN SURVIVE :

In Air and Light :

- Dies in a few hours when exposed to air and light, I. 447.
 Dies very soon in the open air, in articles taken from infected districts, 9296, 9297.
 Grows when covered up from the light in laboratory experiments, 25,304.
 Microbe establishes itself most in darkness, 9683.

In Animal Organisms and Substances :

- Bacillus dies more quickly when obtained from blood than when obtained from urine, 26,337.
 Bacillus disappears very quickly in the blood of rats, 17,500.
 Bacillus recovered from bodies of animals up to 21 days after burial, 27,382.
 Bacillus recovered from saliva 10 days after apyrexia, 25,355.
 Bacillus recovered from sputum of pneumonic case up to 28 days after development of lung

PERIOD FOR WHICH PLAGUE BACILLUS CAN SURVIVE—*cont.*

symptoms, and three days after apyrexia, 25,342-6.

Bacillus recovered from throat 10 days after fever ceased, 25,312.

Disappearance of the microbe after death, the acidity developed in the bodies of persons dead of plague, may aid in causing the, II. 7; 8655, 8681-4.

In Cow-dung:

In laboratory experiments the plague bacillus lived several months in sterile cow-dung, 18,877.

In unsterilised cow-dung the microbe did not live more than six days, 18,880.

In Clothes:

Kept alive for indefinite period in clothes, 10,094.

In Dirt:

Dies in dirt, 1003.

Establishes itself mostly in dirt, 9683.

Incapable of existing in dirt, 1003-4.

In Faeces:

Bacillus of plague dies in 2½ hours in faeces, 3611.

In Grain:

Dies in sterilised solution of rotten grain, 3669.

Experiments to show that the bubonic microbe derived from pure cultures perishes within 13 days after being added to specimens of grains and seeds, II. 17.

Not recovered after seven days in grain artificially infected and then dried, 26,386.

Results of experiments with several kinds of grains and seeds on life of bacillus of plague, II. 15, 17, 18.

Results of experiments on survival of bacillus in grain mixed with the sputum of a human plague patient, II. 18.

Virulence of the microbe on grain only persistent for a few days, 8535.

In Gunny Bags:

Longest period after which recovered from artificially infected gunny bags, seven days, 26,386.

In Milk:

Bacillus of plague grows slowly in milk, 156.

Dies in milk when sour, 3666.

In Soil:

Dies in a few hours in earth when exposed to air and light, I. 447.

Experiments on the growth of the plague microbe in soil, 18,893, 26,132.

Non-sterilised garden mould, can live from four to six days in, 18,867.

Sterilised garden mould, can have a continued existence for 13 days in, 18,865.

In Water:

Lived 44 days in sterilised tap water, 19,086.

Survives application of water and disinfectants in infected floors, 5159.

The bacillus flourishes most luxuriantly when the air is moist, and in damp surroundings, 9683, 18,638.

The microbe does not remain long alive in water, 8540.

When subjected to Drying:

Desiccation with calcium chloride kills bacillus of plague in 18 hours, 26,346.

Exposing a plague culture for four days to ordinary drying does not kill the microbe, 26,345.

When subjected to Heat:

Killed by exposure for five minutes to a temperature of over 62° or 63° C., 27,379.

Plague dies at 45° C., 102.

When subjected to the Sun's Heat and Light:

Growth could not be recovered in any instance from cultures exposed to sunlight for four hours, 26,342.

PERIOD FOR WHICH PLAGUE BACILLUS CAN SURVIVE—*cont.*

Heat of the sun sufficient to destroy plague microbes, 814.

Plague-infected calico rendered sterile by exposure to sunlight, 26,342.

Three hours' exposure to strong sunlight of infected flannel, cotton wool, and cloth, greatly retards the development of the bacilli, 26,342.

Vitality of the bacillus of plague diminished by the sun, 17,031.

Vitality of Plague:

The life of the plague organisms is indefinite, 10,597.

The plague bacillus dies out without use of chemicals, 22,058.

The plague bacillus dies in time without disinfection in about four months, 22,663.

See Acids.

„ Air and Light.

„ Calcium Chloride.

„ Clothes.

„ Cow-dung.

„ Damp.

„ Dirt.

„ Desiccation.

„ Disinfectants.

„ Faeces.

„ Grain.

„ Gunny Bags.

„ Hot Weather.

„ Milk.

„ Soil.

„ Sun.

„ Water.

PERIOD OF EPIDEMIC:

Epidemic ceased in villages after three months without evacuation or disinfection, 22,845-8.

Normal length of the epidemic where no, or insufficient, measures are taken, 9982-3.

PERMANGANATE OF POTASH:

Efficacy of as a disinfectant for plague:

An extremely potent destroyer of the bubonic microbe, II. 9.

Cowdung, 1 gram, deoxidises .04 grammes permanganate, II. 10.

Result of tests with, II. 9-10.

Useless in practice, as it is readily destroyed by organic substances, 8628.

Use of, in connexion with cholera:

When used in well water can check a water-born cholera epidemic, II., 10.

Use of, in connexion with plague:

Bombay: Permanganate of potash used for flushing houses with steam-engines, but given up later for perchloride, 911-2.

Khandraoni, used as, as disinfectant, 9659.

Too expensive and inconvenient for practical use, II. 10a.

Well for camp use at Anand treated with, 14,148.

PERSONS, DISINFECTION OF:

A bath of soap and water without disinfectants would equally answer the purpose, 4298, 4308.

Females: Women are attended to by a female.

They are made to sit down in a tub and the disinfectant is poured over their head, 4314.

Persons disinfected by soap and water bath, 13,896.

Personal disinfection most necessary, 12,053-5.

Personal disinfection more disagreeable to the natives than the disinfection of clothes, 21,510.

People objected very strongly, 4298, 4300.

Poona: Arrangements for disinfection at, 4027.

Rules regarding disinfection of emigrants at Karachi, 13,331-3.

See Camps, disinfection in.

„ Carbolic Acid.

„ Jeyes' Fluid.

„ Perchloride of Mercury.

„ Phenyle.

„ Railway Measures.

PESTIS MINOR:

Cases observed :

- Bombay: Mild cases described, I. 330.
 Bombay: Cases of mild plague in 1898 in Bombay, 18,039-46.
 Bombay: Mild plague, with enlarged glands frequent among plague workers, 18,063-5.
 Bombay: Pestis minor, cases observed in Bombay, 20,516-22.
 Bombay: Pestis minor, observed in Bombay, symptoms described, hard to diagnose; no case of infection from such cases noted, 20,556-63, 20,573-6.
 Bombay: One mild case observed at Parel, 22,349.
 Bombay: Parel Hospital: Case of pestis minor in attendant in post mortem room, 22,489.
 Bulsar: Observed at Kosumba in Bulsar, 26,989.
 Calcutta: Pestis minor, resulting from cut at post-mortem of plague case, 7,003-9.
 Hyderabad Sind: Mild cases of plague, non-infectious, observed in Hyderabad Sind, 18,096-103, 18,146-52.
 Kankhal: Mild case observed in a child, 9467-78.
 Khandesh: Possible cases of mild plague, 24,542.
 Khandraoni: Pestis minor, case of, in child at Khandraoni, 9,678.
 Pali epidemic: Observed during the Pali epidemic of 1836, 27,012.
 Panjab: Boy at Gobindpur, Panjab, got mild plague from an ordinary case, 10,369.
 Panjab: Mild cases at Dasanjit and Aur in the Panjab, and in other villages, 10,337-9, 10,518-50.
 Panjab: Epidemic of *Kanadas* (swellings behind the ears) before plague at Garhshunker, 10,832.
 Poona: Pestis minor, two mild cases observed; other cases probably malarial might be confused with plague, 7,636-52.
 Poona: Mild cases, with neuralgia, among plague workers in Poona, 21,951-7, 21,967-73.
 Bania: Observed at Astrachan, in Rosht, 26,989.

Cases resembling Mumps :

- Banga: Epidemic of mumps resembling plague before outbreak of plague, 10,235.
 Bombay: Two cases in the Umarchadi Jail, Bombay, 69 (1, 2), 7236-8.
 Bombay: Mild case in Byulla Jail, Bombay, with pain in lower jaw, III., 659 (f).
 Kankhal: Case at Kankhal, 9077, 9253.
 Poona: Mild cases in Mahuli village and in Poona city, cases of mumps, of which one later developed plague symptoms, preceded the outbreak of plague, probably infective as so many children had mumps, 21,653-6, 21,664-5.
 Poona: Mild cases of pestis ambulans and cases resembling mumps observed in Poona, 21,951-2.
 Umreth: A case in Umreth, II. 487.

Infectiousness of Pestis Minor :

- Coryza associated with plague, 21,006.
 Coryza: Plague infection, spread by cases of coryza, 20,394-401, 20,532-6.
 Mild case at Gobindpur, spread the disease and a case infected from a mild case was a serious one, 10,999.
 Mild case, instance of possible infection from, 18,059-62.
 Mild case, instances when infection was carried by a, 24,117-8.
 Mild cases probably infectious, 7649, 9422-26.
 No evidence of mild cases being infectious, 14,749.
 Possibility that mild cases act as a connexion between epidemics, 27,000.

PETECHIÆ:

Clinical Feature of Plague :

- Petechiæ not a characteristic sign of plague, 20,833.
 Petechiæ not observed in pneumonic form, I. 369.

PETECHIÆ—cont.

Post-mortem Appearance :

- Petechiæ always found post-mortem, 1420.
 Petechiæ sometimes on the capsule of the kidneys in bubonic plague, 10,421.
 Petechiæ of the stomach a noticeable feature in post mortems after bubonic plague, 10,419.
 Petechiæ not seen on the skin, frequently on internal viscera, 9572.

Prognosis, As :

- Petechiæ sign of bad prognosis, I. 352.

PHENYLE:

Action on Bubonic Microbe :

- Action of phenols and their allies on the bubonic microbe, II. 4a, 5.
 Doubtful whether phenyle and izaral are capable of killing microbe under natural conditions, II. 5.
 Phenyle more active than carbolic acid, II. 5.

Attitude towards :

- Banga: Phenyle favoured by people, 10,306.
 Disinfection of clothes by phenyle objected to by owners, 10,307, 10,817.

Clothing disinfected by :

- Clothing dipped in phenyle and spread out in the sun used as disinfecting method, 10,048-9.
 Disinfection of clothing by a five per cent solution phenyle, 11,452.

Houses flushed with :

- Bombay: Infected buildings flushed with a solution of phenyle or permanganate of potash, 911.
 Bombay: Given up for perchloride in, 911.
 Calcutta: At first used for spraying houses, but afterwards given up for perchloride, 6520-28.
 Khandraoni: Used for houses at, 9659.
 Panjab: Phenyle, 1 in 200, used for disinfecting houses, 10,022.

Persons disinfected by :

- Bombay: Convalescents bathed in phenyle on leaving hospital, 559.
 Panjab: Before leaving evacuation camps, inmates bathed in phenyle, 10,049, 10,235.
 Panjab: Disinfecting gangs bathed in phenyle on leaving work, 10,003.
 Poona: Persons bathed in phenyle and similar disinfectants, 4027, 10,235, 21,273.
 Strong solution of phenyle stings the skin so much that people cannot stand it, 4300.
 Tungabadhra: Persons bathed in phenyle at, 4513.

PIGEONS.

See Birds.

PIGS:

- No appearance of sickness in pigs, although great numbers were at large in the streets of Daman, I. 378.
 Pigs were affected with plague in Daman, 16,355, 16,548.

PILGRIMS:

- Cashmere* pilgrim ship left Karachi carefully inspected; no cases on board, 12,262.
 Nasik a great centre of pilgrimage, 13,751.
 No pilgrims sail from Karachi to form caravans to Mecca, 12,266.
Pekin pilgrim ship left Bombay in December 1896, before pilgrim traffic stopped; plague occurred on board, 752-4.
 Saharanpur: General inspection of pilgrims from Bombay and Sind, 9021.
 Suggested infection of Bombay by pilgrims coming from Kumaun to Nasik Fair, 1545, 1551.

PHOTO-MICROGRAPHS OF BACILLUS OF PLAGUE.

- Photo micrographs of bacilli made in connexion with cases of suspected plague in Calcutta in 1896, III. 369-376.
 See Microscopic appearance of bacillus of plague.

PLAGUE PROPHYLACTIC:

- See Haffkine's plague prophylactic
 ,, Inoculation with Haffkine's plague prophylactic.
 ,, Yersin's curative serum.

PNEUMONIC PLAGUE:

Clinical Features:

- Acute pneumonia a complication of plague, 10,212.
 Brought to notice first in September 1896, 19,170-4, I. 375.
 Course of typical pneumonic plague, I. 381.
 Details of pneumonic cases, I. 63b, 64a.
 No buboes in cases of, 12,918.
 Pneumonic plague rarely with buboes, 2378.
 The plague bacillus always recoverable from blood of patients dead of pneumonic plague, 17,258.

Diagnosis of:

- Absence of inflammation of the pleura a marked difference between croupous pneumonia and plague pneumonia, 9568.
 Cases may readily escape detection if attention directed only to presence of buboes, 13,945.
 Diagnosis of plague pneumonia impossible without bacteriological or at least microscopical examination, 12,476.
 Difficult to distinguish between plague and ordinary pneumonia, 12,469.
 No certainty of pneumonic plague without post-mortem examination, 9435.
 Pneumonic cases discovered by the stethoscope and physical examination of the lungs, 12,911.

Efficacy of Inoculation in:

- Percentage of recoveries, inoculated and uninoculated, in pneumonic plague, 2382.

Fatality of:

- All pneumonic cases in Anand Hospital died, 14,120.
 Children: Pneumonic plague always fatal in, 12,413.
 Great mortality in pneumonic form, 13,040, 15,176.
 Non-bubonic type characterised by pneumonic engorgement of the lungs and accompanied by extreme prostration most fatal, 15,274.
 Percentage of recoveries, inoculated and uninoculated, in pneumonic plague, 2382.
 Pneumonic plague generally fatal in 48 hours, 2379.

Infection: mode of:

- Pneumonic form infectious through the air, 12,339, 17,775, 18,111, 18,174.
 Pneumonic plague infectious through the air by inhalation, I. 351, 20,622, I. 369.

*See Sputum, spread of infection by.**Infectiousness of Pneumonic Plague:*

- Direct infection from patient to patient probable in pneumonic plague, 8663.
 In rooms where cases of pneumonic plague treated, nurses and attendants suffer, except in properly arranged hospitals, 18,908-11.
 Many instances of infection from pneumonic cases noted, 504-8.
 More than one case of pneumonic plague noted in the same house—is the more contagious form of plague, 19,201-4, 19,218-20.
 Plague pneumonia easily given to monkeys by the Russian Commission by spraying solution of virus in the air of the monkeys' cages, 22,362.
 Pneumonic cases specially dangerous and give rise to pneumonic cases, 14,717-9, 14,750.
 Pneumonic cases the infectious cases, attendants on other cases not attacked, 9586.
 Pneumonia form spreads disease most, 4370.
 Pneumonic plague infectious even in hospitals; cf. case of Dr. Manser, 1,439, 1,514-6.
 Pneumonic plague highly infectious, 10,201.
 Pneumonic plague noted for its spread of infection, 11,163.

Pneumonia and Mahamari:

- No suspicion in the Hills of the existence of pneumonic plague until the outbreak at Hardwar, 8833, 8955.

PNEUMONIC PLAGUE—cont.

Pneumonia and Plague of the Bubonic type:

- Bubonic case in one instance gave rise to combined bubonic and pneumonic case, 17,988-9.
 Case of bubonic plague may become very infectious if pneumonia sets in, 6918.
 Instance of infection of members of a family in Hardwar, one bubonic case followed by three bubonic and two pneumonic cases, 9558-60.
 Mixed bubonic and pneumonic case gave rise to two pneumonic cases, 13,179-82.
 No instance in which bubonic plague gave rise to pneumonic case, 19,208.
 No instances of pneumonic plague from bubonic case or vice versa, 14,123, 14,709, 17,785-7, 17,890, 18,206-7, 18,440, 19,075-6.
 Pneumonia developed in bubonic cases, 14,121.
 Pneumonic plague contracted from bubonic case, one instance, 16,048.
 Pneumonic plague got by contact with bubonic cases, 12,728.
 Six instances in which bubonic cases gave rise to pneumonic cases, 15,280.

Pneumonic Cases contracted from Pneumonic Cases:

- Four cases of infection from pneumonic cases in Dharwar Hospital, all the persons infected getting pneumonia, and one having a bubo as well, 1891-2.
 Four people got pneumonic plague, one after the other in one house, where there was no bubonic case, 15,454-8.
 Infection of one type of plague from another type or of pneumonic cases from pneumonic cases not observed, 17,372-5.
 Infection of 11 persons from one case of pneumonic plague in Cutch, 530, 13,366.
 In one case one pneumonic patient infected ten people with pneumonic plague, in another one pneumonic patient infected two others with pneumonic plague, 18,207-13.
 Nurse at Poona contracted when at the plague from a patient, 7576.
 One case of pneumonic plague gave rise to another in attendant, 7515.
 One case of pneumonic plague gave rise to two others, 18,509-10.
 Outbreak of pneumonic plague gave rise to plague: Details regarding, 6836-4, 331-407, 7444-75.
 Outbreak of pneumonic plague at Backergunge: Dr. Amulaya Charan suffered from pneumonia but not from plague, 7067.
 Person who slept in bedclothes of pneumonic patient contracted pneumonic plague, 19,208-35.
 Pneumonic cases give rise to pneumonic cases, 14,717-9, 17,788.
 Pneumonic cases gave rise to pneumonic cases only, four in one family and two in another, at Kankhal and Jawalapur, 9523-35.
 Pneumonic plague: Cases of a laboratory assistant, Dr. Muller, and Nurse Pecha at Vienna, 7220, (17), (22), and (58).
 Pneumonic plague contracted by nurse attending Dr. Manser, when he had pneumonic plague, 1439.

Pneumonic Plague communicates Bubonic as well as Pneumonic Plague:

- Bubonic case contracted by medical attendances on pneumonic case, 9566.
 Bubonic case contracted from bite of pneumonic patient, 4567.
 Bubonic plague communicated by inoculation from pneumonic case, 7218.
 Bubonic plague from pneumonic cases, two instances, 16,048.
 In Gangaur from one case of probable pneumonic plague 37 deaths followed, both bubonic and pneumonic. 13 of the deaths being among the relatives of the first case, 15,182-5.
 In one instance a pneumonic case gave rise to both bubonic and pneumonic cases among eight persons, who all died, 17,990-1.
 No case of bubonic plague traced to contact with a pneumonic case, 12,729.

PNEUMONIC PLAGUE—*cont.*

No instances of bubonic cases from infection by cases of pneumonic plague or *vice versa*, 14,123, 14,709, 17,785, 17,890, 18,206-7, 18,440, 19,075-6.

One case of pneumonic plague at Manora gave rise to one bubonic and three pneumonic cases, 12,997-8.

Pneumonic case gave rise to a bubonic case, 13,177.

Pneumonic plague communicates the bubonic form as well as the pneumonic, 1517.

Pneumonic plague, in one instance, gave rise to two bubonic cases, 18,214-6.

Six instances in which pneumonic cases gave rise to bubonic cases, 15,280.

Pneumonic Plague contracted from Bubonic Cases :

No instances in which bubonic plague gave rise to pneumonic case, 19,208.

No instances of pneumonic plague from bubonic case or *vice versa*, 14,123, 14,709, 17,785-7, 17,890, 18,206-7, 18,440, 19,075-6.

Pneumonic plague contracted from bubonic case, one instance, 16,048.

Pneumonic plague got by contact with bubonic case, 17,728.

Six instances in which bubonic cases gave rise to pneumonic cases, 15,280.

Prevalence of :

Pneumonic cases most frequent in the height of the epidemic, 12,915, 13,104, 18,204.

Pneumonic form of plague not very frequent, 9507.

See Oedema.

„ Lungs.

„ Post-mortem appearances in plague.

„ Sputum.

„ Types of plague in particular epidemics.

PORT REGULATIONS :

Measur plague word and Staff :

ania: Ob Evidence on port regulations, I. 34-8.
26,999, res inspection applied to all crafts, 717.

ases re Bomb Notwithstanding the heavy work
Bomb on the Port Health Officers it was
Bomb out in a most thorough manner,
th, 63.

any : Number of staff under Port Health
Iper at Bombay, 716.

MBonus : Procedure on lines of the Venice
Convention, 3865.

Measures at Infected Places to prevent the Exportation of Plague :

Bombay : After inspection neither passengers nor crew may go ashore again, 732.

Bombay : All out-going crews and passengers inspected by health officer assisted by staff and two lady doctors, 26,638.

Bombay : Any person suffering from unexplained rise of temperature or from chronic enlarged glands detained, 725-6.

Bombay : Crew and passengers examined on shore if bound out of India, 720.

Bombay : Difficulty in collecting crew long enough before-hand for inspection, 794.

Bombay : Examined for second time on day of sailing, 723.

Bombay : In case person removed from a ship develops plague, telegram is sent to first port of call of ship, 742.

Bombay : Method of inspection, 721, 723.

Calcutta : Passengers and crew inspected on shore. All suspicious articles disinfected, 6455-6.

Cutch Mandvi : People own boats plying to Madagascar, African Coast, and Persian Gulf. These are not examined, and take no bill of health, 13,347, 13,513-5.

Karachi : All emigrants to Mombassa were detained at Kiamari, 11,989.

Karachi : All persons from detention camps sent to the steamers under police escort, 12,225.

Karachi : At one time 2,400 people in detention camp at Kiamari, 11,992.

PORT REGULATIONS—*cont.*

Karachi : Measures applied to out-going passengers, 12,222-25.

Karachi : Rules regarding emigrants, 12,231-3.
See Ships.

Measures at Uninfected Ports to prevent Importation of Plague :

Baluchistan ports : All passengers inspected. No cases seen, 8078-93.

Bombay : Arrangements for keeping under observation persons from infected ports or ships, 772.

Bombay : Inspection of vessels arriving started April 1897, modified April 1898, and applied to infected ports only, 766, 781-93.

Bombay : Medical officer goes on board all ships from infected ports, 784.

Bombay : Quarantine rules for ships coming from Hong Kong and Canton, 775.

Cutch Mandvi : All passengers, without exception, segregated for 20 days at Cutch Mandvi, while plague was very virulent in Bombay, 27,121.

Cutch Mandvi : Precautionary measures against Bombay and Karachi in quarantine camp at, 13,507-12.

Cutch Mandvi : Quarantine for passengers from Bombay and Karachi started in Sept. 1897; very successful, 13,344.

Cutch Mandvi : Stringent measures for passengers from Bombay and Karachi, 27,118.

Karachi : Guarded by harbour boats, 12,318.

Karachi : Native crafts from Bombay kept 10 days, 12,317.

Karachi : Passengers coming by sea from Bombay detained in Kiamari camp, 11,893, 12,151.

Karachi : Quarantine for passengers coming by sea unsuccessful, 4239-50.

Karachi : Quarantine tried for a year, but found too severe a measure and raised opposition, 12,194, 12,527.

Karachi : Regulations for the inspection of passengers arriving in port, 12,139.

Ratnagiri : Quarantine an essential measure as all traffic comes by sea, 20,042.

Measures for Disinfection of Clothing and Personal Effects :

Bombay : Disinfection of crews' kit and clothes by exposure to sun and air, 738, 814.

Bombay : Disinfection of every article taken on board ship impracticable, 811.

Bombay : Kits and baggage of persons free from plague not disinfected as a rule in December 1898, 741.

Bombay : Present rules for disinfection of all kit of crews at pilgrim shed, III. 299.

Calcutta : All suspicious articles disinfected, 6455.

Karachi : Clothing of passengers entering by sea disinfected with Jeyes' fluid, 4243.

Karachi : Clothing of passengers from Bombay not disinfected during first epidemic, 12,989.

Statistics of Results of Measures taken at Ports :

Bombay : List of vessels having left in 1897 and 1898, I. 361-2.

Bombay : Plague cases detected chiefly among native passengers departing for local ports, 749.

Bombay : Table of medical examination of crews and passengers on board ships, 25,479-83, App. X. in Vol. I., and App. LXXV. in Vol. III.

Bombay : Total number of ships examined, 50,177, 771.

Bombay : Very few genuine cases have gone on ships bound from Bombay for foreign ports, 767.

Bombay : 85 per cent. of cases reported as plague from ocean-going vessels recovered; 85 per cent. of plague cases in Bombay die, 726.

Bombay : 149 plague cases among outgoing passengers detained discovered by inspection at Bombay, 747.

Bombay : 16,798 people detained at Bombay, 746.

PORT REGULATIONS—*cont.*

- Bombay: 43,477 incoming passengers detained in observation camps, 48 cases of plague, 771-2.
- Bombay: 87,571 crafts inspected at Bombay from January 1st to November 30th, 1898, 745.
- Cutch Mandvi: 15,988 passengers examined from October 1897 to July 1898. Twenty-two cases sent to plague hospital, 27,122.
- Karachi: Details of plague cases in detention camp, 12,982.
- Karachi: In 1897 nine cases of plague was imported by sea, and in 1898 seven cases, 12,995-6.
- Karachi: Of 35,360 passengers detained in camp five had plague, 12,161-2.
- Karachi: Only one mild case of plague among 69,366 passengers and crew on board of vessels between August 1st, 1897, and December 1st, 1898, 12,145.
- Karachi: Seven cases of plague detected among in-coming passengers at Kiamari, 11,998.
- Karachi: 7,310 people leaving by sea detained in April, May, and June, 12,237.
- Karachi: 35,360 incoming passengers detained in detention camp from August 1st, 1897, to December 31, 1898, at Kiamari, 11,987.

See Bombay: *Introduction of plague into:*
 „ Ships.

POST MORTEMES:

- Done in all suspicious cases at Hubli for about three months in 1898, 3,977-8, 20,007.
- Objected to in India, 4615, 10,343, 19,531.
- See* Corpse Inspection.

POST-MORTEM APPEARANCES IN PLAGUE:

In Animals:

- Greater variety in organs of guinea-pigs than in those of rats, 26,409.
- Pathological appearances in animals experimented upon with plague, 26,407.
- Post-mortem appearances the same in animals partially protected by inoculation with plague virus and those dying without previous inoculation, 27,363.

In Plague Patients:

- Appearance of the several organs, III. 44.
- Notes on 54 autopsies in Arthur Road Hospital, 20,972.
- Post-mortem appearances of cases of bubonic plague, II. 65.
- Post-mortem appearances of cases of internal bubo with hæmorrhages, II. 64*ab*.
- Post-mortem appearances of cases of typical plague pneumonia, 6913.
- Post-mortem appearances of pneumonic plague, 1418-33, I. 368-9.
- Post-mortem appearances of septicæmic case, I. 439-40.
- Post-mortem appearances of the septicæmic variety of plague, II. 64*b*.
- Post-mortem of intestinal plague in which the mesenteric glands were found much enlarged, 9371.
- Special appearance of septicæmic form after death, 21,365.
- Summary of post-mortem examination of the different organs, 1419-26.

Post-mortem appearance:

- Hæmorrhages: Description of internal hæmorrhages, 8898.
- Hæmorrhage in every part of the body, 20,972.
- Hæmorrhages: Small hæmorrhages in Peyer's patches seen in two cases, 6899.
- Of alimentary system, I. 367.
- Of brain: Engorgement of the vessels, but no softening or actual hæmorrhage, 1421.
- Of genital system after death from plague, I. 368.
- Of heart: Soft and flabby, 1421.
- Of kidneys, 1421.
- Of kidneys: Only in two case of post mortem kidneys found to be affected, 9622.

POST-MORTEM APPEARANCES IN PLAGUE—*cont.*

- Of kidneys: Sometimes petechiæ on the capsule of the kidneys in bubonic plague, 10,421.
- Of liver, I. 367.
- Of nervous system in the bubonic form, I. 367.
- Of peritoneum, I. 368.
- Of spleen, I. 367.
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- Petechiæ always found post mortem, 1420.
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- Petechiæ of the stomach a noticeable feature in post mortems after bubonic plague, 10,419.
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- See* Blood.
- „ Glands.
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- „ Kidneys.
- „ Liver.
- „ Lungs.
- „ Petechiæ.
- „ Oedema.
- „ Stomach.
- „ Spleen.
- „ Urinary System.

PRECAUTIONARY MEASURES.

See Measures, Plague.

PRECAUTIONS, SANITARY.

See Measures, Plague.

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- Abortion in a plague patient a short time before death, 12,987.
- Pregnancy and miscarriage, prognosis bad, 15,308, 16,544.
- Pregnant patients generally aborted on the first or second day of attack, I. 380.
- Pregnant women miscarry when attacked by plague, 23,733.
- Premature confinement, supposed due to plague, 12,818.
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- Woman died after confinement, but child was not attacked, 1451.
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PREPARATION AND CHARACTER OF HAFFKINE'S PLAGUE PROPHYLACTIC.

See Haffkine's plague prophylactic.

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- Aphasia, 13,030.
- Buboes: Cases with small buboes generally fatal, 21,652.
- Coma, 12,413.
- Diarrhœa generally just before death, 20,950.
- Exudation, rapidity of, 20,725.
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- Petechiæ, I. 352.
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- Presence of bacilli in the blood, 17,402, 20,805.
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 Sphygmographic charts of patients treated in the Arthur Road Hospital, Bombay, III. 547.

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 Cutch: Ten days' quarantine for passengers coming by the land route, 13,344.
 Karachi: Quarantine tried for a year but found too severe a measure, 12,194.
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 Villages: People learn to guard themselves against reintroduction of the disease by keeping outsiders away, 10,976.
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 Experiments in the Hyderabad State on rabbits to test the presence of plague infection in raw cotton, 24,580-7, 24,820-94, 24,922-5, 25,903-9, Vol. III. App. LXVIII.
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African: No African suffered from plague in Calcutta though many, and poor, 6970.
 Bangalore: Statistics of plague according to race, I. 109, 25,015
 Bombay hospitals: Mortality from plague by race, I. 391.

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 Chinese: Not a single case of plague among Chinese or Japanese at Bombay during the three epidemics, III. 43.
 Chinese: Only one Chinaman dies at Calcutta, 6862.
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 Distribution of plague cases among nationalities, 7073.
 Influence of race on plague, 17,681-86, 22,264-7.
 Japanese: Not a single case of plague among Japanese at Bombay during the three epidemics, III. 43.
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Ahmednagar: Excellent railway precautions in, 24,217.
 Bangalore: Adopted at, 3442.
 Bombay: Commenced early in November 1896, I. 52.
 Bombay: Statement of measures for the protection against plague at the several stations of the railways, I. 53-4.
 Poona: System of railway precautions, 21,769.
 Surat: Railway precautions, 15,539.
 Variations in the plague regulations of railway stations most inconvenient to travellers, 21,616.

Detention and Observation Camps:

Ahmedabad: On November 3, 1897, observation camp established at, 13,891.
 Anand: Detention camp opened on November 24th, 1897, and closed May 17th, 1898, arrangements in, 14,106-57, 14,165-93.
 Bandra: Camps for observation of people leaving Bombay; each family had a separate hut, and castes were kept together: no spread of plague in camp, 8236-43.
 Bengal: Detention at Khana till 10 days complete after leaving infected place, 6711-2.
 Bombay: Detention camps employed till middle of 1898. New rules then instituted, including medical examination, disinfection, inquiry as to destination, and detention of suspicious persons, 1285.
 Bhusawal: Observation and plague camps erected for the protection of Calcutta, the Central Provinces, and Bengal, I. 52.
 Dharwar: Observation for people from infected localities, 1927.
 Hubli: Ten days detention for all arrivals in, 2429.
 Hyderabad State: Strict detention on railway and patrols on the roads leading from infected villages have kept plague from the city, 29,916.
 Kaira district: Precautionary measures at the railway stations, 14,018.
 Kotri: Only railway passengers with high temperature detained at, 12,666.
 Malir: Camp for observation of people leaving Karachi; arrangements, 4256-62, 12,440-5, 12,498.
 Malir: Ten days strict detention in Malir segregation camp, 12,495.
 Rajputana: Detention at first for 10, then for five days, 9729-34.
 Rajputana: Interpretation of the word "suspicious" by the Government of India and the Native States, with regard to detention on railways, 9786.
 Rohri: Passengers from Karachi and intermediate stations detained at, 12,065.
 Sibi: All passengers detained for not more than 10 days on coming into Baluchistan, 8086-91.
 Surat: Passengers for, detained or kept under surveillance, 2062.
 Tungabhadra: Detention for 10 days of suspicious passengers, 4490-515.

Detention Camps, Efficacy of:

Detention, if efficiently carried out, prevents the importation of plague beyond the camp, 14,189.

RAILWAY MEASURES—cont.

Observation camps and inspecting stations best means for keeping out the plague, 9728-9.

Detention Camps, Plague Cases in :

Bandra: Twenty cases discovered in passengers from Bombay, 8238.
 Bengal: Six cases of plague detected, 6712-9.
 Bombay detention camps: Number of plague cases in, 1291, 26,537.
 Dadu: Twenty-seven cases taken out of trains developed plague, 12,672.
 Malir: Few cases of plague out of thousands examined, 4263-5.
 Malir camp: 108 cases of plague among the travellers by rail from Karachi, 12,430.
 Poona: Twenty-three cases among 13,606 passes, 21,539.
 Rajputana: 38 plague cases, 9729.
 Rohri: One case developed in 266 detenus, 12,065, 12,072, 12,097, 12,100.
 Sibi: One plague case in detention camp, 8092.
 Tungabhadra: No plague case, 4510, 4516.

Detention Camps, Mortality in :

Table showing number of deaths among detained in Anand camp from causes other than plague, 14,187.

Detention Camps, Number in :

From 5,000 to 6,000 people in Anand detention camp at one time, 14,176.
 From end of November 1897 to end of May 1898, about 58,000 people detained in camp at Anand, 14,177.
 Hyderabad State: Number of passengers examined and detained by railway inspection from February 1897, 5789, 25,912.
 Seven thousand nine hundred and twenty-five persons detained in Malir camp during April, May, and June, 12,429.

Detention Camps, attitude of the People towards :

Objection to detention camps on railways, but not to examination; attempts at evasion, 1298.
 Objection to Malir camp on account of it interfering with trade, 12,528.
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Disinfection on Railways :

Bombay: Disinfection of railway baggage, 1285.
 Disinfection at frontier stations only of third-class passengers who look dirty, 1285, 1312.
 Goods trains: No disinfection of goods trains, 7298.
 Infected carriage either disinfected at once or locked up till it can be, 1334.
 Khana Junction: Method of disinfection adopted at, perfect but no proper supervision, hence clothes, &c. passed through without disinfection, 7494, 7497.

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„ Clothes.

Medical Examination on Railways :

Believed to have prevented infection by railway into Calcutta, 6887.
 Deterrent effect on travelling of plague cases or people who are probably infected, 1297.
 Examination keeps away many who are sickening, 824.
 If medical examination were taken off, the country would be flooded with plague cases immediately, 26,544.
 Medical examination acts twofold; it discovers cases which go out, and prevents a great number from leaving, 26,538.
 Railway inspection first line of defence against introduction of plague in a town, 21,767.
 Stopping suspicious cases as efficacious as old system of stopping all passengers, 1302.
 Train inspection a most salutary measure, 8753.
 Under the precautions of careful medical examinations the exodus of the population from an infected town offers but slight risk, 26,537.

RAILWAY MEASURES—cont.

Value of railway examination, 26,537.
 Value of railway inspections small, 4355.

Medical Examination, on Railways; arrangements for :

Ahmedabad: Railway inspection of passengers from Bombay commenced on October 5th, 1896, 77 cases detected to February 16th, 1897, 13,869, 13,886.
 Anand: System of medical inspection of railway passengers, 14,107-8.
 Baluchistan: Two cases detected by examination, 8092.
 Bangalore: Medical examination of passengers leaving, and regulation forbidding departure without pass, 2586.
 Bombay: Results of medical examination to middle of March 1898, 26,537.
 Bombay: Results of railway inspection on the routes to, 1291.
 Bombay: 221 posts of inspection gradually established at the principal stations and junctions, III. 363.
 Calcutta: 41,854 people detained and six probable cases of plague resulted, 6715.
 Central Provinces: About 20 plague cases stopped by examination by December 1898, 5952-6.
 Female passengers examined by lady nurses, 12,865.
 Guntakal: Inspection, I. 185-6.
 Guntakal: 69,050 examined, 32 detained, one developed plague, 4500-2.
 Guntakal: 111 suspicious cases removed from train, four developed plague, 5130-1, 5140.
 Karachi and Malir: In first Karachi epidemic no cases detected, but 13 detected at Malir in second epidemic, 4256-66, 12,425-45.
 N.W.P.: Two plague cases detected, 8753.
 Occupants of infected carriage, if in good health, not detained, 1337.
 Poona: Examination at first not strict, 12,863.
 Poona: Forty cases detected in 1896-7, 12,850-3.
 Poona: Medical examination of passengers departing in 1896, 2393-6.
 Results of examinations at various railway junctions, I. 53-4.
 Surat: Nineteen passengers detained, of whom 11 developed plague, 15,554-7, 15,871.
 Table of results of medical examinations at certain stations for varying periods, I. 55.
 Temperature made test for detention. Anyone over normal detained for 24 hours' observation, 1286-8, 1301.
 Tungabhadra: 31,272 inspected, no plague cases, 4508-16.
 Wardha district: Several hundred detained, about 20 cases, 5951-5.

RAINS :

Bangalore: Plague measures stopped on account of the rains, 2551.
 Bengal districts: Rainfall is deficient during early months of 1898, 6874.
 Bombay: Abnormal monsoon before outbreak in, 892.
 Bombay: Heavy rainfall, increasing dampness of and rise of sub-soil water level preceded the present epidemic in, 25,268.
 Cutch Mandvi: Epidemic influenced by damp weather and heavy dews, 13,485.
 Germs become less virulent after rains, 22,356.
 Hubli: Rains interfered with the work of plague staff, 1599.
 Kolaba: Epidemic ceased during rains in, 17,650.
 Kotri: Heavy rains and inundations before second outbreak, 12,593.
 Rains assist spread of infection at Hubli, 2.
 Rains assist spread of infection round Poona in 1897, 2.
 Rains make preventive measures almost impossible, 2.
 Rains make supervision and evacuation impossible, 1583-9.
 Rains prevented plague measures in Bhiwandi, 22,176.
 See Evacuation: The rains and their effect on evacuation.

RATS :

Arranged under the following subheads :

Bacillus of Plague, discovery of :
in bodies of dead rats.
in the blood of rats.
in the fæces of rats.
in the spleen of rats.
in the urine of rats.

Death of rats :

Before an outbreak of plague among men.
During and after Outbreak among Men.
Not followed by Plague among Men.
Not noticeable in connexion with Plague among Men.

Regarded as a warning of Plague and action taken upon.

Destruction and disappearance of rats.

Infection of Plague communicated and spread by rats.

Liability of rats to Plague.

Manner in which rats contract Plague.

Movements of Plague-infected rats.

Post-mortem Appearances.

Opinions regarding influence of rats in spreading plague :

Opinions that rats important Agents in spreading plague.

Opinions that rats not important Agents in spreading plague.

Bacillus of Plague, discovery of :

in bodies of dead rats :

Bacillus discovered in dead rats at Bangalore, 3592.

Bacillus found in dead rats at Bombay, 8705.

Bacillus found in dead rats at Hubli, 3117.

Bacillus of plague not found in mummified rats or any other material from the infected houses in the Joria Bazar at Karachi, 11,210.

None found in dead rats, gunny bags, or any material from the infected houses in the Joria Bazar at Karachi, 11,210.

Not found in supposed infected rats, 635.

in the blood of rats :

Invariably found in the blood of dead rats, if examined at once, 17,499.

None found in the blood of rats, 17,248.

None found in the blood of rats inoculated with earth from plague-infected rooms, 26,157.

Microbe disappears very quickly from the blood of dead rats, 17,500.

in the fæces of rats :

Found in the intestinal contents, 8602.

Not found in the excreta, 17,248, 17,410.

Reported as found by the German Plague Commission in the dung, 994.

in the spleen of rats :

Culture from the spleen of a dead rat gave typical plague bacilli, 10,235.

in the urine of rats :

Found in the urine, 17,248, 17,410.

Not found in the urine, 8602, 17,505.

Reported as found by the German Plague Commission in the urine, 994.

Death of rats :

Before an outbreak of plague among men :

Ahmednagar: Rats found dying before outbreak in 1898, 24,276.

Alibag: Many die before recrudescence of plague, 17,619.

Balutji: Die seven or ten days before first plague case, 5518.

Bangalore Lunatic Asylum: Discovered just before outbreak, 3510.

Buroda, Dave Muhalla: Rats died on importation of infected clothes, and persons died after, 15,170.

Baroda: Seen dying near spot where plague first broke out, 15,347.

Belgaum Jail: Dead rats found before outbreak of plague in which seven cases occurred in seven days, 22,870, 22,924-5, 23,047, 23,073.

Bombay: Dead rats found in godowns containing Chinese goods at Mandvi a fortnight before cases of plague occurred, 17,772.

RATS—cont.

Bombay: Death precedes outbreak among people, 1002, 1168, 8288, 10,961.

Bombay: First cases in August, rats die in September, 1176.

Bombay: Malabar Hill: Death of rats usually precedes outbreak of plague, 1375-7.

Bombay: Mandvi Ward: Die in large numbers where plague breaks out, 601.

Bombay: No striking mortality among, before epidemic, 997.

Bulsar: Found dead a week before outbreak among Dhebras, 16,164.

Calcutta: Dead rats preceded plague in seven out of 32 cases inquired into, 7188.

Calcutta: Rats die before human beings in certain houses in, 6451, 7187-8.

Calcutta: Human cases occur where dead rats had been previously found, I. 467.

Calcutta: Found dead before 1898 plague cases, I. 464.

Calcutta: Heavy mortality in March 1898 7503.

Calcutta: Epidemic among, 10 days before first reported case, 6468.

Calcutta: Sickness and death from plague were associated with unusual mortality among rats in houses affected, 7184.

Dead rats found near grain mart before epidemic, 3242.

Dead rats found in two houses 10 days before people were attacked, 10,454.

Death of rats usually, but not always, precedes plague, 25,218-20.

Death of rats precedes plague, as they spread the disease, 25,794.

Die in houses just before outbreak of plague, 1

Die before inmates in infected houses, 3425.

Found dead between an imported and indigenous case, 15,199.

Ghotti: Dead rats found in several parts before plague was discovered among human beings, 14,695.

Guntakal: After the first case rats died and probably spread the infection to the later cases, 5048-62.

Hale Tegur, and Mandihal: Plague followed infection of the rats, 23,558-9.

Hinganghat: Die in houses before outbreak, 6200.

Hyderabad State: Rats generally die before plague breaks out, 5854.

Hyderabad: Great mortality among rats between the imported cases and the first local case, 18,106.

Kankhal: Mortality among rats observed before the epidemic, 8774, 9074.

Karachi: Found dead in large numbers before second outbreak, 3785-90, I. 29.

Karachi: Great mortality among rats, on second outbreak rats beginning to die a week or two before first human case, 11,198-205.

Karachi: Kiamari: Plague cases appeared in the Customs lines soon after some dead rats had been found in the lines, 11,976.

Karachi: Mortality among rats precedes plague cases in houses, 11,313, 11,835-7, 11,974, 22,646.

Khandwa: Rats died on importation of infection, and a human case occurred later, 5958-61.

Kotah: Deaths before outbreak of plague, 4167, 5097.

Kotur: Rats died before spread of plague and spread was due to them, 23,612-25.

Ladghar: Rats died on importation of infected clothes, and men died afterwards, 20,066-73.

Local infection among human beings occurs generally three days after rats begin to die, 23,563.

Mortality in rats in individual houses preceding mortality among human beings in those houses, 18,005.

Mortality among rats invariably precedes that among men, 8906, 19,650-3.

Mortality among rats in 22 villages preceded outbreak of plague by an average of three days, 23,563.

RATS—cont.

Mortality in rats usually precedes human cases by about eight days, I. 464.

Mundra: Before plague became epidemic many dead rats found, 13,401.

Nasik: Dead rats found three days before indigenous cases, 14,705.

Rats seen in a dying condition in a house in Sotran where plague broke out five days later, 10,082.

Sukkur: Affected before outbreak, 290.

Vinzol: Discovery of dead rats followed after a fortnight by plague cases, 14,073.

During and after Outbreak among Men:

Ankleshwar: Several monkeys, rats, and squirrels died of plague, 14,243.

Bangalore: Great mortality after outbreak of plague, 2653.

Bantwa: Many found, particularly in a house with 16 cases, some of which occurred after disinfection, 17,565, 17,589, 17,595.

Baroda: Rats died in, 14,641.

Belgaum: No case in any village in which rats not also affected, 22,898.

Bhiwandi: Many rats and squirrels were found having died of plague, 14,493, 22,124-6.

Bombay: Mandvi: Rats died in large numbers when plague increased in virulence, 8704, 14,437, 19,159.

Die at same time as and after human beings, 7184. After, 7185.

Garshankar: Die in infected houses; not found while disinfection going on, 10,743.

Guntakal: Die in large numbers but not before first plague cases, 4139, 4169, 4171, 4177.

Hubli: Dead rats found in great numbers under the floor of a goods shed, 3117.

Hubli: Dead rats discovered in chawls and town after epidemic had begun, 2442.

Hubli: Hundreds dead in goods shed, 3117.

Jamalapur and Kankhal: Death of rats, 9189.

Karachi: Dead rats very numerous, 11,198-255, 22,646-7.

Kiamari: Rats found in numbers in the railway godowns during plague, 11,974.

Poona: Dead rats in 1899, 21,503, 25,831.

Satara: Dead rats found, 22,530, 22,681.

Sholapur: Dead rats found in every infected village, 24,048.

Sukkur: Heavy mortality at time of plague, 2269-73.

Timmencherla: Death of, in plague-infected houses, 5047, 5051.

Umreth town: Many dead rats found in villages during the epidemic, 14,076.

Not followed by Plague among Men:

Bombay: Dead rats found on ground floors and upper storeys of well-ventilated houses without the subsequent occurrence of plague among men, 25,220.

Bombay: Malabar Hill: Death of rats in a good house not followed by plague, 1447.

Bombay: Sherli village: An epidemic among rats in a village where no cases occurred among human beings, 18,966.

Daman Fort: Many found dead, no case among men supervening, 15,960, 16,449.

Doongri: Rats died without plague among men, 14,377.

Hyderabad State: In several cases rats died in villages where plague did not follow, 5854.

Poona: Death of rats in good houses not followed by plague, 21,538.

Not noticeable in connexion with Plague among Men:

Little evidence of rats mortality in Panjab in the autumn of 1897, but rats died everywhere next spring, 10,127.

Mortality among rats not an incident of plague at Nasik, 13,819, 16,962-4, 16,998, 24,512-4.

No dead rats at Ahmedabad, 13,929.

No dead rats at Rohri, 12,057.

No dead rats in first Bolgaum epidemic, 23,068-72.

No dead rats in certain Dharwar villages where infection not so general as elsewhere, 23,571, 23,578.

RATS—cont.

No great rat mortality in Ahmednagar, 24,090-1, 24,241, 24,276, 24,332.

No great rat mortality noted in Surat, 15,887, 16,062.

No mortality of, observed at Karachi, before first outbreak, 11,098, 11,201, 11,202.

No mortality among rats or other animals at Khandraoni, 9675.

No mortality among rats in Kajurgi, where 22 plague cases occurred, 5504-6.

No rats died at Hardwar, 8913, 9448.

None found at Chipagiri; none at Molagavelli, 4411, 4445, 5011.

Not affected in Cutch during epidemic, 13,461.

Not affected in civil station at Karachi, where there was no plague, 11,345-52.

Rat mortality not noticeable at Poona to February 1899, 7567, 10,923, 21,723.

Rat mortality not noticeable at Sholapur, 23,953.

Very few dead rats in Cutch Mandvi, 13,461, II. 480.

Very few rats in Nagar town during epidemic, 18,992.

Very few dead rats in Palanpur, 13,153-5.

Regarded as a warning of Plague and action taken upon:

Evacuation of village on appearance of dead rats and subsequent plague among the people probably contracted by visits to the evacuated houses, 23,215-24.

Good effects of evacuating villages in Dharwar on appearance of dead rats, 23,583-4.

Hamirpur: Evacuated on death of rats, no outbreak, 10,400-4.

Inhabitants of one village leave because of dead rats; no plague cases, 2116.

In the Broach district the health inspectors are required to report the discovery of dead rats even before the appearance of plague, 14,432.

Nasik: Dead rats cause evacuation of village, 9.

Only houses were evacuated in which plague cases occurred or dead rats were found in fort in Bombay among the Parsees, 25,247.

Palanpur State: Villages evacuated on appearance of dead rats. Plague appeared among the people of these villages after evacuation, 13,146-52.

Voluntary evacuation of Lasundra and Bahutha as soon as rats were found dying in the villages, 14,664.

Voluntary evacuation in N.W. Provinces following an outbreak of epidemic among rats, 2839.

Wasind evacuated on appearance of dead rats, and epidemic stopped, 19,654.

Destruction and disappearance of Rats:

Abnormal increase in number in Bombay in 1896, much damage to grain, 892.

Ahmednagar: Rats entirely disappeared after disinfection and evacuation, 24,330.

Bombay: Rats practically exterminated in the locality of the docks since 1896, 19,247, 19,329.

Half-anna paid for destruction; 50,400 paid for in 1898, 1367.

Khandraoni: Rats disappeared from the villages after plague, 9904.

Lascar's microbe killed white mice but not black rats in laboratory experiments, III. 324.

Marwaris object to their slaughter, I. 464.

Poisoning of, approved, 10,975, 16,251.

Poona: Reported all to have died, 7563.

See Habits of the people.

Infection of Plague communicated and spread by Rats:

Arch: Plague in village in houses in which dead rats found, 22,223.

Bandra District: Plague spread from village to village by rats and occurred on occupation of houses infected by rats, 23,207, 23,210.

Banga: Found infected; and infect the village, 10,235.

RATS—cont.

Bangalore: Only European who had plague had many dead rats and squirrels in his house, 2600.

Bhaynder: Infected by rats from Utan, 5 miles distant, 14,377.

Bhiwandi: Shop full of dead rats the centre of infection, 22,125.

Bite of diseased rat communicated plague, 1181.

Bombay: After dead rats found in a house, every one vacated it except one person, who remained, and 10 days after got plague, 1180.

Bombay: Dukar Gali: Plague in a boy after handling plague rat, 17,996.

Bombay: Granaries at Mandvi attracting the rats, the source of infection is continually renewed, 17,837.

Bombay: In a house in the Fort, on rats dying, and no precautions being taken, the servants and some of the European residents got plague, 20,416.

Bombay: Infected by sick rats from Hong Kong, 19,189.

Bombay: Malabar Hill: Instance of plague cases by sleeping in room where dead rats had 10 or 12 days previously been found, 18,190, 18,196.

Bombay: Rats probably spread disease all over Mazagaon and Byculla, 25,794.

Boys who killed rats in Mandvi fell ill, 997.

Case of individual contamination by dead rats, 11,418.

Children who eat dead rats in Kumaun not affected, II. 334.

Convey infection in an evacuated village, 10,141.

Coolies who cleared out dead rats from Bombay go-downs were not affected, 19,437-41.

Direct communication of plague to persons handling dead rats, 19,021.

Diseased rats taint articles with dung or urine, 992.

Evidence of infection being transmitted by, 10,109-18.

Excreta of rats supposed to cause infection, 15,459.

Fairlie Place: Mortality co-incident in one house with attack of nine workmen, 7182.

Hardwar and Kankhal: The epidemic among rats the connecting link between the outbreak, 8775, 8913.

Solihosur: People out for a month without plague; on their return plague occurred, rats having died in the village, 22,943.

Hunsikatti: Plague apparently spread by rats through the village while evacuated, 23,215-24.

Infection from infected rats through insects to human beings, III. 44.

Karachi: Plague brought by rats, 12,984.

Karachi: Rapid spread of disease through the voluntary evacuations and diffusion of rats in, 11,413.

Karachi: Three people got plague in house in which shortly before rats died, 11,421.

Karad: Plague in postmaster's house after rats died, 14,363.

Man removed dead rat and burnt it, and got plague after, 20,418.

Panjab: Banga: plague probably spread by rats, 10,235, 10,256.

Panjab: Chak Kalal: Plague on premature occupation of houses infected by rats, 10,109-10, 10,189, 10,603.

Panjab: Hamerowal, alleged to have been infected by rats, 10,113, 10,400.

Panjab: Mahlgahla: Plague on occupation of houses infected by rats, 9987, 10,348.

Panjab: Punian: Rats the source of infection, 10,077, 10,401-4.

Panjab: Rats appear to have spread the plague in several villages, 10,152.

Panjab: Rats probable agents of spread in Lidhar Kalan, Bika, and Garkshankar, 10,454, 10,456, 10,844-54.

Parli: Rats took plague from house to house, 19,647.

Plague case follows on a dog laying a dead rat on bed, I. 474.

RATS—cont.

Plague case follows on dead rat being trodden on, 16,513.

Poona Cantonment: Rats supposed to carry infection, but not very numerous, 10,923.

Poona: Cases in 1899 after rats died, 25,831.

Sirohi State: Rats probable source of infection in the, 9722, 9785, 9904.

Spread the plague by contaminating houses, 11,415.

Suspected of causing outbreak in Calcutta in 1898, 7118-23.

Thana: Two men sent to clean a house where dead rats had been found got plague and died, 220.

Three persons in one house got plague, one after the other, from sleeping on the only part of the floor attacked by rats, 23,598.

Umbowda Budruk: Plague follows on death of rats in a house, 22,223.

Woman contracted plague by throwing out dead rat and scrubbing with her hands the place where it was found, 17,926.

Liability of Rats to Plague :

Bombay rats frequently found immune, 26,311.

Rats observed in all parts of Mandvi running about as if drunk, 19,437.

Squirrels seem to die off more quickly than rats during the epidemic, 3120.

Manner in which Rats contract Plague :

Apparently not infected by other rats suffering from plague, 696.

Appearance of lungs in rats dead of plague suggest infection by inhalation, 17,247.

Calcutta: Instance showing that rats may have contracted the disease by gnawing body of a man dead of plague, 7185.

Contract infection before men owing to their connexion with soil, 17,366.

Damaged grain source of contagion to rats thence to men, III. 42.

Eat with impunity supposed infected bags, and artificially infected grain and bags, 635-42.

No data to prove that rats contract the disease from one another, 8906.

Somewhat doubtful whether rats affected through mucous membrane of the respiratory passages, 8703, 26,311.

Take infection from rat-case in Bombay laboratory, 17,498.

Very virulent plague would infect rats if fed with it, 8691, 8733.

Movements of Plague-infected Rats :

Dead rats found in Belgaum in the huts to which evicted people moved, 23,071.

Dead rats found in houses at Surat that had been closed for months, 2042.

Definite proof that rats carried infection along a distance of 600 yards, 22,262, 22,281, 22,437.

Evidence in favour of infection being carried by rats from one part of an evacuated village to another, 22,065-72.

Instance in which plague followed on the appearance of rats in one village and not in another, 14,377.

Instance in which plague was carried by rats to a considerable distance, 14,363.

Instance in which rats carried plague one mile, 23,215.

Kalindri: Plague carried by rats to a well outside the village, 9718-24, 9784-7, 9859-61.

Migrate from infected area to distance of two miles, 17,566.

Migrate on the occurrence of the disease, 1244.

Movements across Bombay from grain stores bring plague, rats moving in advance of and spreading the disease, 998, 1168, 1260-1, 8277, 8288.

No evidence obtained in Panjab that rats migrate in numbers from plague villages, 10,107.

No migration of rats observed in the villages near Baroda, 14,645.

Observed migrating over the causeways from Bombay, 19,237.

RATS—cont.

Opinion on observations in Dharwar that rats never move out of a village, 23,596.
 Rats carried plague from Dharwar to a village $\frac{1}{2}$ mile away, 2116-20.
 Rats followed villagers into camp and from one camp to another in two villages in Satara, 23,012.
 Rats found in a health camp just outside a village in the Panjab, 10,120.
 Rats migrated $\frac{1}{2}$ mile to Bhagda from Bulsar and took plague, 16,190.
 Rats present, found alive and not dead, in Arthur Road Hospital, Bombay, which they have not left on account of plague, 21,008-10.
 Rats seen to go from house to house in Karachi, 22,646-7.
 Sirohi State: Rats migrated from village to village carrying plague, 9784.
 Some having died, others leave house, 16,473.

Post-mortem Appearances:

Greater variety in those of guinea-pigs than in those of rats, 26,409.
 Pathological appearances in rats experimented upon with plague, 26,407.

Opinions regarding influence of rats in spreading plague:

Opinions that Rats important Agents in spreading Plague:

Animals do not seem to spread plague except, perhaps, rats, I. 378.
 Danger of infection through clothes much less than through bags containing grain, in which rats would nestle, 994.
 Disinfection of houses in India useless, as they are infested with rats which keep up the infection, 11,460-2.
 General belief of epidemiologists that rats are the principal carriers of infection, I. 464.
 Infection chiefly spread by rats, 998.
 Infection conveyed by rats, 17,251, 25,794.
 Karachi: The wretched condition of the houses in the market quarter and their insanitary conditions enabled rats to spread the disease, 22,649.
 Karachi Disease spreads very rapidly in the market quarter because plague broke out there and was assisted by unsanitary condition and also spread by the rats in the granaries of that quarter, 22,645-6.
 Karachi: Rapid spread of disease through the diffusion of rats in, 11,413.
 Little doubt that rats carry infection after it has been introduced by human agency, 22,693.
 Mandvi, Bombay City: The granaries attracting the rats, the course of infection is continually renewed, 17,837.
 Opinion that imported cases do not give rise to epidemics unless the rats are affected (Cutch Mandvi) II., 477 (k) (3).
 Plague spreads by proximity through the agency of rats, 10,456.
 Plague spreads by the agency of rats, but it also seems to travel of itself, as there are very few rats in some villages attacked, 22,618.
 Poona: Undoubted infection by rats, though a localised one, 25,831.
 Rats an important agency, 22,064-6.
 Rats chiefly carry the plague from house to house in villages, 22,618.
 Rats have much to do with spread; in two villages died 15 to 20 days before local cases, 17,779.
 Rats more important agents in spread than men, 17,925.
 Rats important agency; spread plague near grain market in Bangalore, 3229, 3240.
 Rats chiefly, and also infected persons, spread plague, 3361.
 Rats, infected before man, spread the disease, 14,072-8, 15,199, 18,107, 18,792-5, 19,650, 22,922, 24,044.
 Rats and grain somehow responsible for infection, 8277.
 Rats, clothing, and some unknown agent in the retail grain shops spread plague, 11,278.

RATS—cont.

Rats must convey contagion, for they are always found where plague is found, 17,891.
 Rats play an important part in the propagation of the epidemic, 11,835.
 Rats the most powerful source of infection, 19,028.
 Result of experiments to determine the importance of rats in the spread of the epidemic, III. 324.
 Spread infection where helped by insanitary conditions, 1446.

Opinions that Rats not important Agents in spreading Plague:

Did not convey infection to ships at Bombay, 17,677.
 Doubtful whether they spread infection, 5498.
 Epidemic at Palanpur cannot be traced to rats, 13,170.
 Hubli: No epidemic noticed before outbreak of plague, 1579.
 Infection not traced in Hubli district to rats, 1651.
 Influence of rats in spreading plague has been exaggerated, 25,831.
 No evidence how far they spread the disease, 5853-4.
 Not charged with infection in Hubli district, 1651.
 Plague spreads along lines of human communication, not by rats, 16045.
 Rats become infected simultaneously with man, not before, 18,436-7.
 Rats have little influence in disseminating plague, 17,678.
 See also Ships.
 " Spread.
 " Virulence of bacillus of plague.

REACTION DUE TO INOCULATION.

See Inoculation with Haffkine's plague prophylactic.

RECRUDESCENCE OF PLAGUE.

See Recurrence of plague in infected towns and villages.

REURRENCE OF PLAGUE IN INFECTED TOWNS AND VILLAGES:

Due to cause not traceable:

Recrudescence cannot be prevented by exertions in any big city, 7863, 7908-11.
 Ahmednagar: Possible instances of villages infected in one year from infection that had lain dormant in neighbouring villages infected the year before, 24,099-106.
 Alibag: Second epidemic started spontaneously in, probably from last year's germs which remained dormant, 17,820, 25,878.
 Bandra: Recrudescence after 24 months, 19,086-94.
 Baroda: Second epidemic began in October 1897, in the same part of the town as the first epidemic, 14,596, 15,335.
 Bombay: Second epidemic, December 1897, 2.
 Cutch Mandvi: Recrudescence began among the Salats, who escaped in the first outbreak, and was not due to imported cases, 13,411.
 Dhamdachha: Without apparent cause of infection, fresh outbreak at, 15,119.
 Kanaswadi: Supposed recrudescence in, 24,542.
 Kotri: Local origin of the second outbreak, 12,710.
 Kotri: Recrudescence without any obvious cause at, 3795, 3820.
 Kotri: Date of last case in first epidemic, May 9th, 1897; first recognised case in second outbreak, October 28th, 1897, 12,580, 12,581.
 Kotri: First diagnosed cases of plague in second outbreak dotted all over the town, 12,595.
 Sirohi State: Recrudescence of plague, 9713, 9810.
 Surat: First case in recrudescence had lived long in the town, and first four cases occurred together, their origin being untraced, 15,594.
 Thana: Bassein: Recrudescence due to a permanent source of infection present, 18,778.

RECURRENCE OF PLAGUE IN INFECTED TOWNS AND VILLAGES—*cont.*

Due to Re-infection :

- Most generally re-infection is due to re-importation, 22,717.
 Nasik : Out of 200 cases only five in houses where plague appeared during first epidemic, 24,510.
 Panjab : Recurrence of plague in villages due to re-infection, 10,051-2.
 Poona : Infected a second time from Kirki, 21,579.
 Poona, &c. : Second outbreaks in, may have been due to re-infection, 7911.
 Thana : Recrudescence generally traceable to second infection, 18,797.

Severity of Plague on its :

- Bandra : Recrudescence with increased virulence in, 18,926.
 Bandra : Type of plague most virulent in third epidemic, 19,084.
 Bombay : Third epidemic in, more virulent than the two first, 18,472, 17,888.
 Damam : Second outbreak less severe than first, 58.
 Karachi : First outbreak spread very slowly, second very fast, 11,105, 11,221.
 Karachi : Second epidemic more virulent than the first, 3692.
 Poona : Course of second epidemic, 21,683.
 Poona : Third epidemic entirely different in its aspect from the former two, and very much more virulent and more rapid in spreading, 25,860.
 Second epidemic more severe than the first in all localities, 7868.
 The disease seems to increase in virulence with every repeated outbreak, 25,860.

RECURRENCE OF PLAGUE IN THE SAME HOUSE OR LOCALITY.

- Adambar : Outbreak of plague on people visiting houses to disinfect them, 22,372.
 Ankleshwar : Instance of a person contracting plague by sleeping in an evacuated disinfected house, 14,412.
 Bandra : Recurrence in the same houses visited by plague during first and second epidemic, 19,090.
 Bangalore : More than one case occurred in 297 houses, 25,031.
 Bantwa : Increase of plague when people driven back to the town from camp by a storm, 17,558-9.
 Bantwa : Sixteen cases occurred in house in, some after disinfection, 17,589-92, 17,595.
 Baroda City : Plague decreased on evacuation, but increased when people returned to city on account of rains, 15,234.
 Baroda : Savali : Cases again occurred on return of people to their houses on account of rain, 14,658.
 Bassein : Recurrence of epidemic in the same spot notwithstanding repeated disinfection, 18,779.
 Belgaum : Sweepers' quarter evacuated and reoccupied in ten days, when more cases : residents were then cleared out indefinitely, 2090-7.
 Belgaum : Several cases in disinfected houses, 22,835.
 Bombay : After disinfection of chawls, plague always recurred in them on reoccupation, 25,790.
 Bombay : A good house, 45, Argyle Road, continually attacked in spite of disinfection, 19,437.
 Bombay : Cases appear after disinfection, 1211.
 Bombay : Cases recurred in 1899 in same houses and same rooms as were infected before, 25,227.
 Bombay : Large number of cases suddenly occurred in a particular chawl, 22,382.
 Bombay : Many houses reinfected on reoccupation after disinfection, 20,439.
 Bombay : Umarkhadi Jail ; series of cases in persons sleeping in a particular part of the jail, 20,331-8.
 Bulsar : Plague recurred on reoccupation in houses disinfected with perchloride and of which roofs were opened up, 16,236.
 Cutch Mandvi : Bada, and Salaya : Plague on revisiting infected houses, 13,431, 13,456.
 Cutch Mandvi : Numerous cases in same houses in first epidemic when people not removed ; similar

RECURRENCE OF PLAGUE IN THE SAME HOUSE OR LOCALITY—*cont.*

- series of cases not noticed in second epidemic when houses vacated, 13,440.
 Hinganghat : People from camp come to fetch grain from infected huts. Revives plague, 6008, 6024, 6055, 6069.
 Hubli : A man who went to his infected house from camp sickened of plague within 11 days and died, 20,076.
 Igatpuri : Failure of disinfection, and recurrence of plague in houses, 23,196.
 Instances observed at Bulsar and Surat of recurrence of plague in disinfected houses, 24,451.
 Karachi : Case of plague through surreptitious occupation of police lines when evacuated, 14,412.
 Karachi : Plague on premature occupation of disinfected houses, 11,266, 11,268, 11,271, 11,276.
 Karachi : Recurrence of plague cases in disinfected houses if only left vacant for 10 days, 25,198.
 Kaira : Common occurrence of plague cases among persons returning to houses which were not infected at the time of evacuation, 14,070.
 Kankhal : Attacks due to visits to Jawalapur for disinfection of infected houses, 9226.
 Kotri : Death from plague in the only house which had escaped disinfection, 12,648.
 Kotri : Case of recrudescence in disinfected house, 12,559.
 Mysore City : Particulars of houses in which plague cases recurred, 25,031.
 Nasik : Persons attacked at Trimbak on revisiting infected temple, 12,812.
 Padmal : Plague on revisiting infected houses, 22,737.
 Patanpur : Increase of plague on evicted people re-entering the town to visit temple for Diwali festival, 13,080.
 Panjab : Compounder attacked after visit to infected house, 10,588-91.
 Panjab : Plague in evacuation camps due to visits to infected houses, 10,758.
 Poona : Cases often recurred in houses even after disinfection, 21,614.
 Porbandar : Cases again broke out on premature return to the town on advent of rains, 31,678.
 Satara : Jailor's house infected three times after thorough disinfection, 22,062, 22,137, 22,330, 22,384-5, 22,535, 22,549.
 Satara : Ten cases observed of recurrence of plague in same houses, 22,549.
 Sirohi State : Recrudescence of plague in, in houses disinfected by perchloride, 9712.
 Sukkur : A large number infected by a plague case in temple, in which five disinfecting coolies also died, 18,403.
 Surat : Cases during the second outbreak in the same houses and the same rooms where they occurred in the first, 18,473.
 Surat : Plague reappeared in eight out of ten evacuated localities, 15,781, 15,818.
 Surat : Recurrence of plague in thoroughly disinfected houses, 16,111.
 Surat : Table showing the re-infected localities with period of freedom, II. 299.
See Camps : Return of people from camps to evacuated houses, and spread of plague in.
 „ Evacuation : *length of period.*
 „ Incubation period : *Incubation period in cases contracted by visits to infected places and houses or contact with the sick.*

RECURRENCE OF PLAGUE IN THE SAME PERSONS :

- Baroda : A second attack of plague in a woman about a year after the first, 15,123, 15,133-42.
 Belgaum : Case of boy who had two attacks, in November 1897 and February 1898 ; recovered, 23,103-7.
 Bombay : Case of a man who died in Modikhama Hospital of his third attack, 19,348-54.
 Bombay : Case of Ghella, who was twice attacked, 19,355-9.
 Bombay : Case of Mr. Munchershaw, who had plague three times, 19,520-40.
 Bombay : Dr. Davur's case, who died of plague in a second attack after recovering from a first attack and being inoculated, 18,017.

RECURRENCE OF PLAGUE IN THE SAME PERSONS—*cont.*

- Bombay: Instance of a second attack of plague, 22,493.
 Bombay: Instance of a person attacked by plague three times, 19,108.
 Bombay: Mr. Champaklal Thakurdas twice attacked by plague, 19,541-96.
 Bombay: Mr. Narayan Muljee, three distinct attacks of plague, 19,597-628, 20,525.
 Bombay, Parel Hospital: Two cases, 7261.
 Bombay, Parel Hospital: A sweeper who had plague in December got the disease again next March and died, 7,219 (3).
 Bombay: Two cases recorded; one died, I. 381.
 Cutch Mandvi: Case of second plague attack; recovered, 13,492, II. 471.
 Daman: Person attacked in 1897; recovered, inoculated, and attacked a second time a month later, 16,554.
 Daman: Case of fisherman who had three separate attacks within six months, 16,655, 16,704-40.
 Daman: Case of a man who had two attacks, 16,652-4, 16,684-703.
 Daman: Instances of persons attacked by plague a second time, 16,649-51, 16,673-83.
 Panjab: A case of recurrence of plague in which the second attack was milder than the first, 10,830.
 See Relapses.

REGISTRATION OF DEATH:

Opinions and Recommendations regarding:

- Certificate of death, impossible in 90 per cent. of cases, 1126-40.
 Death certificates would be very unpopular, 8014.
 Decline of mortality from other causes during plague mainly due to defect in the report of the village officers, 23,289.
 During the rains, reports take a long time to reach the Collector, 22,964.
 Half the people are not attended by men qualified to declare cause of death, 7701.
 Incorrect: Plague returned as chronic rheumatism, 8051-2.
 Law should be passed making death registration compulsory within six hours, and removal penal, 10,990.
 Native Assistant Surgeon class might be entrusted with the giving of death certificates, 26,761.
 Obligation to report deaths generally imposed by Municipal byelaws but not enforced, 23,308-11.
 Organised registration system expensive, but more beneficial than the present mode of dealing with plague, 10,993.
 Returns forwarded to Deputy Sanitary Commissioner, 1629.
 Returns take some time in getting from villages to Sanitary Commissioner, 7919.
 Small towns, in, number of deaths approximately correct, but causes of death extremely incorrect, 8054.
 Spread of plague among the uninoculated due, in Hubli, to removal of restrictions on the burial of patients without report of death before burial, I. 409.
 System of death registration might be practicable in towns, but scarcely in the villages, 26,788.
 System of death registration impossible to combat infective diseases, 26,732.
 System of death registration without corpse inspection would be very valuable, 26,748.
 Village officers inclined to report cases as plague to save themselves trouble, 3.
 Village registers kept by the headman, 1627.
 Village watchmen incompetent to ascertain cause of death, 10,283.

Particular remarks regarding, in:

- Agra: Registration of births and deaths very inaccurate in, 10,280.
 Ahmedabad: Death registration by counting the corpses which are carried through the gates, 13,877.
 Ahmednagar: First case of plague discovered by death register in, 24,239.

REGISTRATION OF DEATH—*cont.*

- Aminbhavi: Interval before increased death rate comes to official notice, 2201-10.
 Ankleshwar: The burning grounds guarded by peons and patawalas, 14,298.
 Bangalore: Only effective when paid agents were put on at, 2555.
 Bombay and Bengal: Government trying to devise better scheme in, 7833.
 Bombay: No system of death certificates, 1126.
 Bombay: No system of registration of sickness or death, 10,962.
 Bombay: Sole death registration at the cemeteries, 25,737.
 Bombay: Notification of the cause of death obtained through the police, 17,899.
 Bombay: The police and municipal registers of deaths quite correctly kept for the last 25 years, 17,751.
 Bombay: Information obtained from friends at the cemeteries, 1115.
 Bombay: If no evidence, plague is assumed as cause of death during epidemic, 1134.
 Bombay: A large amount of under registration, but also an amount of over registration of plague, 907.
 Bombay: Proposed system of improved death registration, 25,740.
 Bombay: Allowing an office for every 5,000 inhabitants, 160 registration offices would be required, 10,991.
 Calcutta: No system of death certificates at, 6512.
 Calcutta: Hindus and Muhammadans dead against registration, 7549.
 Calcutta: Number of deaths obtained at burning and burial grounds. Not cause of death, 6510.
 Calcutta: Mortuary returns very unsatisfactory; they give an idea of the general number of deaths but not of the causes, 7522.
 Calcutta: Many plague cases returned under false names, 7523-5.
 Calcutta: Fever cases wrongly returned to avoid suspicion, I. 471.
 Central Provinces: Deaths in rural areas reported by policemen, 6139.
 Cutch Mandvi: No death registration measures taken during the plague in 1897, statistics imperfect, 13,374.
 Daman: Sepoys kept on the burying ground of the Mussulmans and cremation places of the Hindus to report the deaths, 16,417.
 Daman: No regular compulsory death registration, 16,641.
 Dharwar: Weekly return of deaths sent to each native magistrate of a village, who reports to collector, 1636.
 Hardwar: System of registration organised during the presence of plague in the villages, 9205-9.
 Hubli: A good many plague deaths escaped record, 1590.
 Hubli: Death certificate system introduced during plague worked well, every case being seen and no burial allowed without certificate, 3075-7.
 Hubli and Dharwar: System in, supervisors go round weekly, 1665-6.
 Hubli and Dharwar: Ordinarily done by municipal authority; taken over by plague staff, 1623.
 Hyderabad State: Death returns are kept with the village records by the headmen, police, and revenue patel, 5855.
 Karachi: Death certificates from volunteers and municipal commissioners accepted for children under two years of age, 12,790.
 Karachi: Death registration enforced by law, obligation to report in two days; period reduced to immediate report after plague outbreak, 11,290-1, 13,222.
 Karachi: Death returns made by plague superintendent, 11,287, 11,386.
 Karachi: Of death, very accurate at, 11,408.
 Madras: Death returns as to number accurate, but not as to cause, 4353-4.
 Madras Presidency: Method of, 3394-900.
 Mysore: Most accurate, 24,257.
 N.W. Provinces: The sweepers report deaths to the municipal office, 8855.

REGISTRATION OF DEATH—*cont.*

- N.W. Provinces: No part of India in which the system of death registration is so efficiently carried out, 8858-62.
 Panjab: Deaths registered on report by village watchmen to the police, 10,280.
 Poona: a bylaw existed regarding reports of death, but was not enforced, 21,553-6.
 Rohri: Death certificates required for disposal of dead; police observe burning huts and burial grounds, 12,026.
 Satara: Punctual compliance with the order for notification of deaths within 72 hours, 22,566.
 Surat: Death registration very deficient, 15,829-50.

REGISTRATION OF INOCULATED PERSONS.

See Inoculation with Haffkine's plague prophylactic.

RE-INOCULATION.

See Inoculation with Haffkine's plague prophylactic.

RELAPSES:

- Case recovered on 15th November: recurrence of plague on 2nd December, 1229.
 Gadag: woman who left the hospital cured after a mild attack got plague again in eight days, 23,710-7.
 Relapse very common, 50 or 60 per cent. develop an iliac or pelvic bubo, 20,923.
See Recurrence of plague in the same persons.

RELAPSING FEVER:

- Many cases sent to plague hospitals proved to be of relapsing fever in Bombay, 25,732.
See Diagnosis of plague.

RELIGION AND INFLUENCE OF RELIGIOUS HABITS ON LIABILITY TO PLAGUE:

- Ankleshwar: Among Hindus (who are more numerous), majority of plague cases at, 14,953, 14,444, 14,448.
 Bangalore: Plague and religion, 25,015.
 Baroda: Statistics regarding, 14,989, 15,219.
 Bombay: Hindus suffer worst at, because of their low standard of living, I. 352.
 Bombay, Parel Hospital: Statistics of plague by religion, I. 257.
 Christians in the village of Vadala sleeping in beds more immune than the Hindus sleeping on the floor, 19,446.
 Christians show a high mortality at Calcutta, 6554.
 Christianised Hindus, Bombay: The lower mortality among, attributable to their diet being better, 17,685.
 Dutch Mandvi: More recoveries among Muhammadans than Hindus, 13,479.
 Hindus more feeble than Muhammadans, and have less vitality, 27,041.
 Hindus resist plague less than the Muhammadans, the resistance of lower caste being less than that of the higher, I. 349.
 Influence of religious habits on plague, 17,681-6.
 Karachi: Statement of cases by castes and religions, 11,827, 12,356.
 Kotri: Hindus only attacked in first epidemics, 12,578.
 Kotri: Of the 100 cases of the second epidemic, 77 were Hindus, 25 Muhammadans, 12,639.
 Kumaun: Hindus very dirty, 6159.
 Muhammadans not more liable to the disease than Hindus, 10,810.
 Muhammadans suffered less than Hindus at Mandvi, 13,478.
 Muhammadans singularly exempt at Surat, 15,635.
 Muhammadans suffered most in Bangalore and Mysore, 25,016.
 Muhammadans suffer severely at Bangalore, 2598.
 Mussulmans suffer more than the other communities at Daman, 16,424.
 Mysore City: Statistics of plague and race, 25,015.
 Parsees in Surat, had 11 imported cases but no indigenous case, 15,632.
 Parsees live in better parts of the town, and are clean in their habits, and suffer less than other communities, 12,358.

RELIGION AND INFLUENCE OF RELIGIOUS HABITS ON LIABILITY TO PLAGUE—*cont.*

- Rohri: About 5 Hindus to every Muhammadan present during plague; 7 cases among Muhammadans and 111 among Hindus, 12,091-3.
 Surat: Hindus suffered most, being more overcrowded than the Muhammadans; Parsees and Europeans living in good houses suffered little, 15,632-4, 15,637-8.
 Surat: Statement of cases according to religions, 15,635, 15,642.
 Well-fed Muhammadans and Memons little liable to infection and less attacked than Hindus at Karachi, 11,898.
See Inoculation with Haffkine's plague prophylactic.

REMOVAL OF MORIBUND PATIENTS TO HOSPITAL:

Condemnation of:

- Bangalore: Removal of moribund patients considered an inhuman measure and forbidden, 2628, 2679.
 Bombay: Moribund patients not removed 25,635, 25,560-1.
 Chances of recovery reduced 50 per cent. if removed to hospital in dying condition, 12,494.
 Patients should not be sent to hospitals when moribund, 2628, 7866.
 People taken to hospital that would have recovered if let alone, 8126.
 Poona: All patients except the moribund removed to hospital, 25,841.

Mortality in Hospitals of Patients within 24 hours of admission:

- Ankleshwar Hospital: Of 141 deaths, 61 occurred within 24 hours of admission, 14,443.
 Baroda: One hundred and forty-three out of 342 patients died in 24 hours, 15,266.
 Bombay: Thirty-eight per cent. of cases died within 24 hours of admission in Arthur Road Hospital, Bombay, 25,734.
 Calcutta: Many people taken to hospital in moribund condition, 6551.
 Gadag: Of 334 admissions 60 died within 24 hours of admission, 23,692.
 Karachi: Death-rate within 48 hours after admission to hospital, 60.4 per cent., 12,419.
 Sassoon Hospital, Poona: 34.5 per cent. died within 24 hours of admission, 12,897.

REMOVAL OF THE SICK TO HOSPITALS:

Arrangements regarding:

- Ahmedabad: Plague cases at once removed to hospital and contacts to segregation camps, 13,926.
 Belgium: Patients not removed to hospital unless voluntarily, 22,808.
 Bombay: Many cases sent to plague hospitals proved to be relapsing fever in, 25,732.
 Bombay: Measures directed chiefly to removal of patients to hospital, 17,865.
 Bombay: Persons attacked with plague in, removed to hospital, 10,953.
 Bombay: Policy to remove patients to hospital, 923-33, 25,559-61.
 Calcutta: First epidemic; one of the principal measures, 6,520.
 Calcutta: Second epidemic; policy of compulsory removal abandoned, II. 532 (6).
 Concealment of cases threatened with removal to Government hospital, 13,157.
 Daman: Plague patients removed to hospital, contacts left in the house, 16,369.
 Karachi: Removal of the sick not enforced at first, 11,109.
 Karachi: Many sick removed from infected to non-infected areas without permission, such removal prevented by making cases so removed liable to removal to hospital, 11,111-2.
 Karachi: Sick segregated and removed to hospital later, 11,620-3, 11,952.
 Poona: Sick in first epidemic removed, 10,914.
 Surat: Disease reduced to 30 per cent. within one month by removal of sick cases to hospital, 16,005.

REMOVAL OF THE SICK TO HOSPITALS—*cont.**Attitude of the people towards :*

- Bangalore: A source of dread and horror to the people, 3239.
 Calcutta: Very bitter opposition to removal of patients, 6445.
 Compulsion should not be used with regard to removal of patients to hospital or of contacts to camps, 25,095.
 Daman: Carriage of sick to hospitals in bullock carts caused many deaths, 16,402.
 Government hospitals: General dread of, and especial objection to be taken there on stretchers, 22,656.
 Objection to remove the sick to Government hospital in Bombay, 17,865, 18,259.
 Removal to hospitals disliked, 8260.
 Removal to hospital an objectionable measure from Indian's point of view, 16,232.
 Resentment owing to the manner people were conveyed to hospital, 17,952.
 Satara: Removal of patients to plague hospital very offensive to people, 22,542.
 Worrying the people about sending their patients to hospital leads to concealment, 25,806.

See Concealment of plague cases.

„ Isolation of the sick.

„ Removal of moribund patients.

„ Treatment of the sick in their own houses.

RESPIRATION:

Clinical Feature of Plague :

- Grave cerebral and respiratory symptoms in cases without marked bubonic enlargement, 12,897.
 Hurried and oppressive respiration marked in cases without bubonic swellings, 12,897.
 Respiration generally hurried, voice disconnected and slurring, 12,399.
 Respiration hurried, I. 380.
 Respiration in pneumonic cases much more hurried than in other forms of plague, 12,914.

RETURN OF PEOPLE TO THEIR HOUSES.

- See Camps. Return of people from camps to evacuated houses.
 „ Evacuation. Length of period of evacuation.
 „ Incubation period. Incubation period in plague cases contracted by visits to infected places and houses or contact with the sick.
 „ Recurrence of plague in the same house or locality.

REWARDS.

See Informers.

„ Spies.

RIVERS:

- Belgaum: Nearness of a place to a river has no connexion with the prevalence of epidemic, 22,954.
 Dharwar: Plague spread along the river, but did not cross it, 23,227-40.
 Satara: Epidemic confined to towns and villages along the bank of the river, 22,147.
 Satara: Most villages in the affected talukan are on the river, 22,707.
 Surat: River precautions, 15,543.

ROAD INSPECTION:

- Baluchistan: All suspicious cases detained; no plague found, 8081, 8094.
 Bijapur: Road posts to perfect Bagalkot from Kaladgi, 23,635.
 Bombay routes guarded, and all but two closed to foot traffic, 1291.
 Hubli and Dharwar: Road posts instituted, 1585.
 Hyderabad State: Patrolling roads assisted in keeping out the plague, 25,916.
 Hyderabad State: Roads watched, 5151.
 Poona: Road patrols, 21,299-301, 21,327-8.
 Sion Causeway: Seventy-three cases detected, 180 at Mahim Bandra Causeway, 1291.
 Statistical results of inspection, 1291.
 Surat: Road precautions, 15,541.

ROLL-CALL:

- Ankleswhar: Daily roll-call at in order to detect cases, 14,273.
 Bangalore: Census at Civil and Military Station during epidemic, I. 107.
 Baroda: Residence in camp checked by roll-call, morning and evening, 14,620.
 Baroda: Census of villages taken and checked, 14,651.
 Bulsar: Census taken and carefully checked, 16,288, 16,296-306.
 Hyderabad State: Census of villages in infected area taken and checked, 5465.
 Khandesh: Daily roll-call best means of control, 24,588.
 Kotri: Population of the town checked every day at, 12,628.
 N.W.P.: Beneficial result of appointment of inspecting officers, who checked census of villages for the discovery of newly-infected areas, 9934.
 N.W.P.: Roll call in camps, 9169, 9334.
 Panjab: Cases in which one person was substituted for another in the roll-calls, 9972-6.
 Panjab: Differences between population actually present and roll-call numbers, 9938-44.
 Poona Cantonment: Population checked by nominal rolls, 10,907, 21,259.
 Poona City: Second epidemic; roll called in segregation camps every morning to ensure presence of segregated people during night, but people allowed to go where they wished during the day, 21,964.
 Umreth: Census and daily roll-call, 14,034-6.

See Camps.

ROOF.

- See Disinfection: Houses, extent of disinfection.
 „ Soil.
 „ Unroofing.
 „ Untiling.

ROOMS.

See Houses.

ROUX' CURATIVE SERUM.

See Yersin's Curative Serum.

SANITARY CONDITIONS:

Existing Conditions :

- Ahmedabad: Defective sanitation in, 13,956.
 Bangalore: Number of houses in the city and of pit and conservancy privies, 3386.
 Bangalore: Sanitation defective, 3250.
 Bangalore: Table of statistics of several kinds of houses, I. 128.
 Bangalore: Water of wells contaminated by the soakage of the dirt in the yard, and for mixing with the milk, I. 179.
 Baroda: Sanitary conditions bad, 15,193.
 Bombay: Ashpits non-existent in, galls take their place, 856.
 Bombay: Chawls, central passages not kept clean on account of dispute regarding liability between landlords and tenants, the former being legally responsible, 263, 864.
 Bombay: Chawls dirty, 16,985, 26,636.
 Bombay: Conservancy system, 25,754-66, 25,774-8.
 Bombay: Domestic sanitation of the Tarwadi district on the latrine and basket system, 17,861.
 Bombay: Drainage arrangements: more than a quarter of the island without drains, 25,741-53.
 Bombay: Excessive over-crowding and dirt in the chawls, 16,985.
 Bombay: In some parts, basket system of scavenging is practised, 25,754.
 Bombay: Mandvi quarter built on the former sweepings of, 19,177.
 Bombay: Mortality from phthisis and the lower forms of fever attributable to bad sanitation, 885.
 Bombay surroundings very unhealthy, 1,971.
 Calcutta as insanitary as Bombay, 7242.
 Calcutta bustees in no way sanitary, 7632.
 Calcutta: Conservancy rendered difficult by coolie strikes, I. 471.
 Calcutta: Description of some of the worst areas of the town, I. 463.

SANITARY CONDITIONS—*cont.*

- Calcutta: Fearful sanitary condition of parts, I, 464.
 Cutch Mandvi: Extremely bad sanitary conditions, I, 351, 13,349-53.
 Dharwar: Sanitary conditions bad, 2305-27.
 Karachi: Existing sanitary conditions very bad, 22,649.
 Mysore decidedly more insanitary and water-logged than Bangalore, 24,984, 25,043, 25,124-7.
 Rohri: A particularly dirty town, always ravaged by small-pox, and has a high rate of mortality, 12,049.
 Villages: Sanitary conditions in, 7922.

Improvements in Sanitary Conditions:

- Ahmedabad: Sanitary improvements effected in the cantonment whilst people were out in camp in, 24,191.
 Ahmedabad: Sanitary improvements have reduced the ordinary mortality of the town as compared with the previous five years in, 24,347.
 Bangalore: Improvement begun by building new quarters, 3481.
 Baroda State: Sanitary improvements effected in, 15,154-66.
 Bombay: Drainage has improved the health of the people, 25,767-73.
 Bombay: Dustbins to be provided, 874.
 Bombay: Great improvements made in recent years in parts of the town, with regard to light and ventilation, 25,702.
 Bombay: Improvements in sanitation generally handicapped by want of funds, 19,761.
 Bombay: Landlords prefer paying fines to making the required improvements in sanitation, 17,861.
 Bombay: Notices to landlords for sanitary improvements, only one-fifth have been acted upon, 18,275.
 Bombay: Lord Sandhurst's "Improvement Scheme" will be a failure unless people can be taught to believe in fresh air, 22,377.
 Bombay: Proposed laws for the improvement of the sanitary condition, 25,278.
 Bombay: Shone system of drainage introduced in certain districts, 25,752.
 Bombay: Statement showing the numbers of houses marked U. H. H. in each ward, in 1897 and 1898, III, 310.
 Calcutta: Improved of late years, even the back galls are comparatively clean now, 7148.
 Calcutta: Native quarter very much the same as 60 years ago, I, 464.
 Calcutta: Sanitation greatly improved; hence slow spread of plague, 7148-50.
 Calcutta: Sanitation improving, 6656.
 Cutch Mandvi: Great improvements since epidemic in sanitary arrangements, 13,506.
 Great progress made in last 10 years in India, list of larger works done, 7838-40.
 Impossible to introduce an effective system of sanitation where money is scarce, 2561.
 Karachi: Sanitary improvements effected since plague, 22,654.
 Muchis object to light being let into their houses, 15,164.
 Not practicable to effectively carry out the sanitary regulations unless the village officers can be depended on, 19,642.
 N.W.P.: Sanitary improvements effected, 8843.
 Powers of municipal bodies in sanitary matters, 7809-10.
 Proportion of municipal income spent on sanitary work, I, 278.
 Rural areas: The sanitary reforms attempted and required in, 7841, 7922.
 Sanitary improvement complicated by political considerations, 7925.
 Scheme for promoting the knowledge of personal and general hygiene among the people of India, III, 292.
 Surat: Golas refused to move from their insanitary dwellings; municipality too poor to compel them, 24,459.
 Surat: Improved sanitation since plague, pit privies closed, 15,927-36, 24,459.

SANITARY CONDITIONS—*cont.*

The Bombay Municipal Bill ought to be extended to the whole of India, 26,712.
 Want of money rather than want of advice the great obstacle to sanitary improvements in India, 17,238.

Influence of Sanitary Conditions on Plague:

- Ahmednagar: Plague broke out in an unhealthy part of the town which is open, where there was no drainage system, 24,228, 24,264.
 Bad ventilation, over-crowding, and dirt the principal factors in the propagation of the disease, 14,388.
 Bad water, damp, filth, and bad conservancy favour plague, 15,151.
 Bombay: In new streets attacked houses over-crowded and with defective ventilation, 25,784-5.
 Bombay: Outbreak in the insanitary Mahalakshmi temples, 1545.
 Bombay: Plague just as bad in the new streets where lighting and ventilation are improved as in the old parts of the city, 25,700-15.
 Bombay: Severity of epidemics generally can be estimated beforehand, according to the buildings and the classes of the population, 890.
 Bombay: Sewer pollution not the cause of plague, 19,437.
 Cutch Mandvi: The disease propagated by insanitary conditions, I, 351.
 Defective lighting and ventilation and keeping cattle in houses favour plague, 23,180-6.
 Evidence on the sanitation of Bombay, the origin and course of epidemic, and the measures adopted to stop it, I, 39-52.
 Excess of moisture of soil, general vitiation of the air by over-crowding and temperature, the predisposing conditions to plague, 17,354.
 General insanitary conditions, over-crowding, &c. develop plague, 2923.
 Hygienic conditions probably cause improvement in general health and check plague, 21,718-9.
 Incidence of plague greatly influenced by the conditions under which the people live and their surroundings, 14,446.
 Insanitary surroundings, bad ventilation, and moist floor in plague houses, 21,548.
 Karachi: Civil station remained non-infected during the second epidemic, 11,345.
 Karachi: Disease spreads very rapidly in the market quarter because plague broke out there and was assisted by insanitary conditions, and also spread by rats in the granaries of the quarter, 22,654-6.
 Karachi: Drainage system not responsible for the severity of the outbreak, 22,651.
 Karachi, Poona, and Bombay: Improved cleanliness of the towns did not check the disease in the second outbreaks, 3704, 8707.
 Kumaun: Prevalence of plague due to insanitary conditions and keeping grain and cattle in houses, II, 361.
 Outdoor life the reason of immunity of certain classes, 22,129.
 Over-crowding, lowering of the vitality, habitual disregard of hygienic rules cause plague, 25,263.
 Plague cannot appear and spread in sanitary surroundings, 26,709-10.
 Plague does not assume a virulent form where sanitary arrangements are good, 11,851.
 Plague found only where dirt, dampness, and over-crowding prevail, 21,323.
 Plague spreads by insanitary conditions, 1442, 7180.
 Plague worst in insanitary houses, and can be more easily stamped out in sanitary houses, 24,363.
 Relation between bad sanitary conditions and plague not so clear as in other diseases, 8707.
 Rohri: Failure of evacuation at, owing to insanitary condition of camps, 12,120.
 Rohri: Heavy mortality among the people from the suburbs attributed to the neglect of all sanitary measures, 12,082.

SANITARY CONDITIONS—*cont.*

- Sanitary habits the secret of social immunity, 22,412.
 Surat: Plague worst in the worst localities, 15,93^a.
 Under hygienic conditions attacks very rare, 15,193.
 Insanitary conditions the principal factor in the spread of plague, 15,149.
 Want of ventilation, dirt, and over-crowding responsible for virulence of plague, 3386, 11,228, 11,281.

Sanitary Improvement as a Plague Measure :

- Extinction of plague and the prevention of recurrence depends upon sanitation, 26,712.
 Sanitation the essential thing to stop plague, but expensive, 7999-8000.
 Sanitary improvements should not be started during the epidemic, 15,223.
 Sanitary improvements the only real way of attacking plague, 7837.
 Sanitation is essential in order to exterminate plague and the prevention of recurrence, 26,712.
 Sanitation should be first line of defence against plague, I, 403.
 Sanitation and raising the moral tone of the people by gentle measures best means to fight the disease, 24,935.

See Air and light,

- „ Damp.
 „ Housing.
 „ Latrines.
 „ Over-crowding.
 „ Ventilation.

SANITARY DEPARTMENT:

Board :

- Administrative power of Sanitary Department, 17,169.
 Boards do a fair amount of work in a quiet way, 8034.
 Boards do work without holding formal sittings, 7958.
 Civil medical administration in the Bombay Presidency, system of, 17,147-56.
 Constitution of Sanitary Board, 7799, 7806.
 Constitution of Sanitary Board in the Panjab, 10,500-6.
 Legal enforcement of sanitary measures in the N.W. Provinces, 8845-9.
 No scheme involving an expenditure over Rs. 1,000 is passed in the N.W. Provinces until the Sanitary Board has approved of it, 8853.
 Note on the N.W. Provinces Board and on the works it has executed, Vol. II. App. XXVII.
 Reports on sanitary matters in Bombay sent to Surgeon-General's office, who forwards them with recommendations to the District Collector, which are seldom acted upon for want of funds, 17,207.
 Sanitary Board in Bombay, constitution of, 17,162-8.

Commissioner, Sanitary :

- Commissioner can take no direct action by himself, 7753.
 Commissioner has advisory duties, no executive functions, 7725.
 Commissioner now put under Inspector-General to give him control of hospitals, 7757-8.
 Commissioner responsible for vital statistics and vaccination, 77-9.
 Duties of Sanitary Commissioner and his staff, 19,702-11.
 Method of selecting Sanitary Commissioner, 7938-42.

Inspectors :

- Advantage if Inspector could diagnose plague, 3982.
 Hospital Assistants are not so well educated as Sanitary Inspectors, 3974.
 Inspectors on their round gather information as to plague in villages, 14,435.
 Inspectors paid 70 rupees a month in Madras, 3956.

SANITARY DEPARTMENT—*cont.*

- Inspectors must have matriculated at Madras University, 3922.
 Inspectors would be the better for a medical education, 3933.
 Inspectors not medical men in Madras Presidency, 3920.
 Surat: Sanitary Inspectors have no medical training, 15,833.

Organisation :

- A new organisation of the Sanitary Department of India most urgently required, 26,791.
 At present staff is insufficient and ineffective, 26,793.
 Each district should have a Sanitary Officer; estimated cost, 1 anna per head of population, 8002-6.
 Question of control of District Medical Officers by Head of Sanitary Department as well as by Head of Civil Medical Department, 7960-6.
 Scheme by which Assistant Superintendents of Vaccination would be Assistant Surgeons with a knowledge of sanitation, 8881.
See Civil Medical Department.
 „ Civil Surgeons.
 „ Health Officers.

Special Arrangements for Emergencies :

- Hardwar: Sanitary staff increased on the occasion of large fairs, 2012.
 Hardwar: Special precautions taken during the fairs in April, 9023-4.
 Staff of Health Department, Bombay, greatly increased during last epidemic, 25,727.

SANJAR :

- See Mahamari and Sanjar.*

SCAVENGERS :

- Strike of the conservancy establishment at Calcutta, I, 471.
 Strike of the sweepers at Bangalore, 25,091.

Plague among :

- Bangalore: Several cases among the scavengers in, 3226.
 Bombay: Scavengers in first epidemic in, notably free, I, 878.
 Scavenger dies of plague at Molagavelli, 4435.
 Sweepers, as well as other dirty castes, not much attacked, 22,266.
 Sweepers escape because bacillus dies in the dirt with which they deal, 1004.
 Sweepers first infected in Belgaum, 2086.
 Sweepers, on account of their filthy work, have, to a certain extent, become immune, 18,642.

SEARCH PARTIES.

- See House Searches.*

SEASONAL VARIATION OF PLAGUE:

- Chart showing seasonal variation in Bombay City, 26,549, Vol. III, Appa. LXXVII., LXXVIII., LXXXV.
 Fresh colonies of rats continually get plague in the Mandvi quarter and spread it, 17,837.
 Suggestion that plague rises in Bombay when the season for export of grain ends, as rats then resume activity in spreading the disease, 8277.
See Meteorological conditions.

SECOND ATTACKS.

- See Recurrence of plague in the same person.*
 „ Relapses.

SEGREGATION :

Advisability of : opinions regarding :

- Compulsion should not be used with regard to removal of contacts to camps, 25,095.
 Evacuation an excellent measure if combined with segregation, 11,482, 12,051.
 Evacuation, segregation, and disinfection valuable in the order named, 23,032.

SEGREGATION—*cont.*

In villages segregation unnecessary beyond the removal of the sick and their attendants, 18,781.
 Isolating the contacts most necessary, 12,053-5.
 Practically impossible, drives inhabitants away, 7043.
 Securing of all the contacts one of the principal advantages of voluntary camps, 11,821.
 Segregation and thorough disinfection of every house in the place necessary measures in cases of plague, 9436.
 Segregation and isolation absolutely perfect in theory, but impossible in India, 7043.
 Segregation essential, 13,191.
 Segregation should be accompanied by disinfection, 18,426-8.
 Segregation, sound in theory, but impossible in large cities, 7996.
 Segregation impossible with existing resources in rural areas when many villages infected, 22,743.
 Segregation of contacts not recommended, 18,949.
 Segregation, relaxation of, of neighbours, resulted in improvement in voluntary reports of cases, 16,029-32.
 Segregation with early information, evacuation, and inoculation important, 26,708.
 Segregation useless if people are allowed to return to their houses after 10 days, 11,475.

Arrangements for :

Ahmedabad : Contacts at once removed to segregation camps, 13,226.
 All contacts placed in segregation camps in Palanpur State, 13,086.
 Bangalore : Policy of segregation adopted, 2576, 3261.
 Baroda : Segregation adopted, 14,604, 14,618-9.
 Baroda villages : Contacts successfully segregated, 15,106-8.
 Bombay : Accommodation for 5,000, could be increased to 20,000, 453.
 Bombay villages : Complete segregation not attempted, 8-9, 26,662-4.
 Bombay : Not allowed to take all the contacts to camps in, 10,953.
 Bombay : Removal to camp reserved for people from over-crowded and very poor houses, 8258.
 Bombay : Rules of segregation camp, 496.
 Cutch Mandvi : People segregated as far as possible, 13,377, 13,440-1.
 Daman : Plague patient removed to hospital, contacts left in the house, 16,369.
 Hardwar : Arrangements in, 9327-43.
 Hubli : Contacts and inmates of infected houses segregated, 1944-5.
 Hyderabad (Sind) : Contacts segregated in villages, 18,396.
 Karachi : At the beginning of outbreak, infected houses evacuated for ten days and all their inhabitants segregated, 12,027.
 Karachi : Contacts removed to segregation camps in May 1898, 11,157-9, 11,674, 11,245.
 Karachi : People from infected houses, and later from neighbouring houses as well, removed to camp, 11,142, 11,149.
 Karud : Segregation and disinfection the only measures adopted, 21,077.
 Khandraoni : System of segregation in, 9642-9.
 Khandraoni : Villagers divided into four classes and sent to separate segregation camps, 9647.
 N.W.P. : Segregation strictly enforced, 9331-7.
 Panjab : Segregation of patients and friends one of measures adopted, 10,057, 10,450.
 Poona : Contacts sent to segregation camp, disinfected and detained 10 days, 19,936.
 Porbandar : 3,500 Kharwas put in segregation camp in a few hours; fed by the State at a cost of Rs. 250 a day, 13,671-4.
 Porbandar : Residents from the worst infected quarters of, segregated in country crafts moored in the creek, 13,681.
 Rohri : People allowed to return to their disinfected houses after 10 days' segregation, 12,034.
 Rohri : Segregation camp at, under extremely favourable conditions, 12,064.

SEGREGATION—*cont.*

Rohri : Whole blocks segregated at, 12,032.
 Sind : Segregation policy adopted, 12,027.
 Surat : All persons in houses where unreported deaths occurred segregated, 15,715.
 Surat : Food and blankets provided in the segregation camp from a charitable fund, 24,418.
 Surat : Segregation of contacts impossible, as there was no proper accommodation, 24,417.

Attitude towards :

Bangalore : Highly unpopular at, 2622, 3282, 3480.
 Bangalore : Objection of Muhammadans to segregate contacts in, 3238.
 Calcutta : Panic caused principally by the fear of segregation in, I. 468.
 Calcutta : People all refused to go into segregation huts, 7289.
 Calcutta : Objection to segregation but not to disinfection, 6545.
 Confinement of cases, segregation leads to, 2672, 3390.
 Dharwar : 18,000 persons left in one week for fear of segregation, 23,746.
 If carried out vigorously would cause great opposition, 1276.
 Karachi : People object strongly to Government segregation camps, 12,527.
 Nasik : People refused to go to prepared segregation camps, 24,477.
 Nasik : About 5,000 people left from dread of segregation, 13,832.
 Passive opposition in every large town of India against, got over by tact and firmness, 26,667-8.
 People hate being sent to contact camps, 25,818.
 Segregation of contacts an objectionable measure from the Indian's point of view, 16,232.
 Sholapur : People fly on occurrence of a death to escape segregation, 20,237.
 Surat : People object most to inoculation and segregation, 15,865.
 Thana district : No opposition to evacuation, segregation very unpopular, 18,788.
 See Exodus of people.

Efficiency of : opinions in favour of :

Calcutta : Probably effective in keeping down plague at, 7138.
 Chart showing the mortality among Muhammadans at Porbandar for 15 days before and after segregation, II. 222.
 Cutch Mandvi : Borah community promptly segregated and treated with Yersin's serum; low rate of mortality, I. 353.
 Favourable effect on those removed, 1248.
 Khari and Pali : Course of disease the same in, notwithstanding in the latter place the contacts were not segregated, 18,943.
 Lessens the number of cases in the same family, segregation of contacts considerably, 13,440.
 Results of segregation unsatisfactory for the want of adequate resources, 22,743.
 Siddhntaki : Stops extension of plague at, 7414.
 Vadala : Plague stopped among the Luvana community by placing them in a segregation camp at the first appearance, 13,737.

Failure of : opinions regarding, and instances of :

Bangalore : A failure at, on account of the difficulty of securing the contacts, 2684.
 Bombay : Contacts if disappeared generally traced and brought back, 10,917.
 Bombay : Found impossible in, 311.
 Bombay : Inadequately carried out at, 1200, 4029.
 Difficult in Bombay, where 100,000 persons come to earn a daily wage, 1088.
 Impossible to get hold of contacts in a crowded chawl, 8261.
 Results of segregation unsatisfactory for the want of adequate resources, 22,743.
 Segregation and isolation of the sick did not arrest the progress of the disease at Baroda, 14,601.

SEGREGATION—cont.

Period of Segregation of Contacts :

- Bombay: Contacts taken to camp for 10 days, 1345.
 Bombay: People from contact camp allowed to return to their houses 10 days after the last cases had occurred among their family, 10,929.
 Dharwar: Contacts detained 18 days, 1920.
 Hubli: Segregated people at, allowed to leave after 10-15 days, but not back into the town unless inoculated, 2433-4.
 Hubli people kept up to 18 days, 1656, 1902, 1956.

Relaxation of:

- Bangalore: With evil effects, relaxed at, 2670.
 Belgaum: Owing to rains, people not segregated, 22,806-9.
 Bombay: Contacts merely obliged to be in camp at night, 1354, 25,629.
 Bombay: In March 1898, segregation modified in, 8258.
 Calcutta: Abandonment at, produces no bad results, 7660.
 Calcutta: Contacts had to leave infected rooms, but were not segregated or watched, 6591-5.
 Calcutta: Practically abandoned in, for reasons of policy, 7610.
 Calcutta: Second epidemic; contacts not segregated, but induced to leave infected houses, II. 532 (6).
 Calcutta: Segregation compulsory, early abandoned in, 6535.
 Dharwar District: Contacts not segregated in certain villages, 1660-3, 23,541-2.
 Igatpuri: Impossible owing to rains, 19,455.
 Kalyan: From not segregating the contacts serious results at, 19,661.
 Kalyan: Persons paying Rs. 20 or more income tax allowed to be segregated in their own houses at, 19,663.
 Karachi: Methods of segregation modified in the course of the epidemic, 11,143, 11,258-65, 11,675, 11,822, 11,894.
 Mysore State villages: No segregation of sick or contacts, 3333.
 Mysore: The non-interference with the people in town the main cause of keeping plague from spreading to the villages round, 24,970.
 Poona City: System modified in second epidemic, 21,694.
 Poona City: Third epidemic; contacts required only to sleep in camp for three nights, 21,817-20.
 See Camps.
 „ Contacts:
 „ Inoculation with Haffkine's prophylactic:
 Inducements to inoculation.
 „ Notification of disease.

SEPTICÆMIC PLAGUE:

Clinical characteristics of:

- Description of typical course of septicæmic plague, I. 381.
 Notes on case of acute septicæmia, I. 439-40.
 Septicæmic cases with neither buboes nor pneumonia, 6943.
 Septicæmic plague may easily escape detection if attention is only directed to the evidence of buboes, 13,915.
 Slight glandular enlargement in plague indicates fatal septicæmia, 6986.

Fatality of:

- No septicæmic cases recover, 6950, 12,920, 12,394.
 Cutch Mandvi: Usually fatal in six to eight hours, 13,487.

Infectiousness of Septicæmic Plague:

- Septicæmic plague not particularly dangerous in spreading infection, as patients die so rapidly, 4371.
 Septicæmic plague not specially infectious as cases generally die quickly, 12,481.
 Septicæmic plague gave rise to bubonic plague in one case, 16,048.
 Septicæmic plague gave rise to septicæmic plague in one case, 16,048.

SEPTICÆMIC PLAGUE—cont.

Septicæmic Plague contracted from Bubonic Cases:

- Bubonic plague case gave rise to a case of septicæmic plague with secondary pneumonia, 13,003-13.
 Difference between septicæmic and bubonic the lesser resistance of the glands, I. 368.
 Septicæmic plague contracted from bubonic; 10 instances, 16,048.
 Septicæmic shades into bubonic form, I. 471.
 See Post-mortem appearances of plague.

SEQUELÆ OF PLAGUE:

- Complete deafness followed plague in one case in Daman, 16,823.
 Complete disintegration of the orbits and disease of the eyes followed plague, 16,770, 16,822, 16,833, 20,896-901.
 Gangrene a sequela of plague, 16,750, 16,778, 20,885.
 Hemiplegia followed plague, 16,766, 16,832.
 Inco-ordination a sequela of plague, I. 383-4.
 Lunacy after plague, 17,582, 20,791.
 Neuritis, peripheral, sequela of plague, 20,918.
 Paralysis followed plague, 16,763, 16,772, 16,824-31, 16,833, 20,917.
 Paraplegia followed plague, 16,832-33, 20,918.
 Speech, loss of, followed plague, 16,820-1, 16,833.
 Wrist drop a sequela of plague, 20,918.

SERUM:

- Bactericidal effect not noticed in the serum of convalescents from plague, 26,406.
 Bactericidal power of the serum of an animal recovered from plague has very little protective power on another, 27,371.
 Experiment, reported by Dr. Klein, on animal in which therapeutic serum appeared to hasten instead of retarding the course of plague, 27,350.
 Necessity for strict comparability between serum cases and controls in observations undertaken to test the serum, 20,952.
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Buboes in Women:

- Buboes, females mostly axillary, 18,051.
 Women in contact ward, Bombay, suffered more from axillary buboes than men, 18,049.

Greater liability of Women:

- Baroda, cases preponderant among females 15,361.
 Bombay: Female cases more numerous, 18,240.
 Cutch Mandvi: Women chiefly attacked possibly because more men than women ran away, 13,477, I. 352.
 Daman: Women suffered most, 16,521.
 Fact that women are, as a rule, more affected by plague than men would point to the floor as seat of infection, 16,216.
 Greater proportion of females than males, 18,240.
 Panjab: Many villages in which women were attacked first, 10,134.
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Less liability of Women:

- Calcutta, 1898: 174 male cases came to notice for every 100 female cases, 6575.
 Preponderance of plague cases in men due to their occupations exposing them more to infection, 12,349.
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- Bangalore Hospitals: Plague cases by sex, 2913, 2923.
 Baroda State: Table of Plague cases according to sex, II. 282.
 Bombay: Arthur Road Hospital; plague and sex, III. 459.
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 Surat: Table of gross mortality for the last three years among men and women, II. 301.
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 Umreth: Table of total attacks and deaths by castes, sex, and age, II. 233.

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- Not affected by plague, I. 378.
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- Serum of sheep used for curative inoculation, 130-3.

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- Disinfection of ships carried out under inspection of harbour authorities, 815.
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- Annie Maude*, three cases of glandular fever among the crew of the, 26,934.
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- Medical examination on board ships acts as a deterrent to the travelling of infected persons, 25,482.
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- Cellulo-cutaneous necrosis, 20,875.
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- Found in four cases in small lesions of the skin, 1393.

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Assertion that Bacillus easily found by Microscopic Observation only in Soil by Hyderabad State Plague Officers :

- Assertion that infection tracked from house to house by microscope alone in Hyderabad State, 5730.
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Not found in blood of rats inoculated with earth from plague-infected rooms, 26,157.

Not found in earth or dust from infected localities, 619-20, 635, 995, 25,347, 26,139, 27,137.

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Not found in floor soil, 1456.

Not found in 21 experiments for the discovery of the bacillus in infected floor sweepings and soil from Bombay, Dharwar, and Hyderabad, I. 358-60.

Not isolated from floor scrapings of infected rooms by inoculation in rats, 619.

Soil from infected houses: bacillus morphologically like plague found by CO₂ method, 26,141.

Sterilised earth, details and results of experiments to ascertain whether it can be recovered from, in cultivation with CO₂, 26,434.

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Infectivity of Soil:

Bacillus of plague supposed to be always present in soil, and becomes virulent after the rains, 22,356.

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Average number of micro-organisms in 1 gram floor material of occupied houses 3,000,000; of unoccupied houses 1,000,000, 18,805.

Comparison between the number of bacteria found in a house before and after its disinfection, no test as to value of disinfection, 26,369.

List of micro-organisms found in various samples of soil and dust from native dwellings, 18,818.

Seven distinct species isolated from samples of earth from Calcutta, 26,329.

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„ Floors.

„ Hydrogen.

„ Infection by locality.

„ Isolation of plague bacillus.

„ Period for which plague bacillus can survive.

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Clinical Features of Plague:

Aphonia very common, 12,402, 12,901, 16,527, 17,581.

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Eight cases of absolute aphonia; recovery 12,400.

No aphonia noted among patients at Sassoon Hospital, Poona, 12,905.

Thick speech, I. 379, 15,295, 20,675.

Voice disconnected, and slurring, 12,309.

Prognosis:

Improvement in speech good prognosis, 15,310.

Sequela to Plague:

Loss of speech followed plague, 16,820-1, 16,833.

SPIES:

Bombay: Spies and watch on the cemeteries the only means of controlling the chawls in Bombay, 16,987.

Kotri: System of detectives for discovering plague cases, 12,026.

Rohri: Detectives employed successfully to obtain early information of plague at, 12,026.

Use of spies and watch on the cemeteries the only means of controlling the chawls in Bombay, 16,987.

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SPLEEN:

Clinical Feature of Plague:

No abnormal symptoms in spleen, 12,411.

Spleen in bubonic plague very much enlarged and congested, 10,421.

Discovery of Bacillus in:

Found in spleen of plague corpses, 7189.

Found post-mortem in spleen, I. 370.

Post-mortem Appearances:

Of spleen in septicaemic case, I. 439.

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SPREAD OF PLAGUE:

Animals and Men:

Animals do not transfer plague to one another, 27,343.

Do not seem to spread plague, except perhaps rats, I. 378.

In Kariha plague spread only in a particular class, though rats were affected, 10,123-6.

In Thana spread of plague among particular classes not noticed, 18,789.

No reason for supposing that the virus of plague may be conveyed from place to place, independent of the agency of men or rats, 9480, 9579.

Plague in Surat and Daman spread along lines of human communication, not by rats, 16,045.

Plague spread by human agency or by rats, 19,942.

Spread by human agency chiefly, also by clothes, rats, squirrels, and monkeys, 22,278.

Spread in most cases from person to person or by rats, 20,412.

Instances and Opinions that Human Agency important Agency in spreading Plague:

Ahmedabad: Infection conveyed by Bombay refugees who stayed 3 days, 15,202.

Ahmednagar: Cantonment in, plague introduced by persons sheltering in the city from the, 24,227-8.

Ahmednagar: Conveyance always by human agency, 24,089, 24,303.

Ahmednagar: Plague brought to, by a Mali from Poona, 24,133.

Ankleshwar: Plague introduced from Chandod by human agency, 14,208.

Bandra: Infected by a person who came from Bombay with plague, 18,922, 19,427.

Baroda: Dhers and Mahars, spread plague as they collect and sell rags, 15,337.

Baroda: Spread from place to place by human agency, 15,200.

Baroda: Spread of epidemic to different parts of the town traced to people visiting each

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other, or to the removal of actual plague cases, 14,608.

Baroda: To the State villages by human agency, plague imported from, 14,644.

Belgaum: Plague introduced by a family which came from Sirur, where there was plague, 23,028-9.

Broach: Plague brought by butchers from Ankleshwar, 15,484.

Bulsar: By human agency, plague brought from Bombay, 19,941.

Bulsar: Plague introduced by Dhebras, who visited Billimora, got plague there, and fell sick on their return, 16,160.

By human intercourse, 10,391-3, 13,456, 16,066, 18,756.

Calcutta: Instance to show how contagion is disseminated by human agency, and forms fresh foci of disease, I. 477-8.

Chipagiri: Infected by persons who visited Guntakal and brought plague back with them, 4397.

Cutch Mandvi: Presumed to have been infected by persons from Karachi, 13,366.

Cutch Mandvi: Spread of the epidemic to the villages of Cutch State, 13,398-405.

Dharwar: By human agency from village to village, 1641, 23,502, 23,626.

Dharwar district: Ugargol infected by man who visited Dharwar and brought infection from there, 22,878-85.

Disease introduced by persons coming from infected places, 14,072.

Distinct history of infection by human intercourse in rural and urban areas of Bombay Presidency, 23,207.

Gadag: Many people come from Dharwar and died in Gadag of plague, 23,554.

Ghoti: Plague carried from Igatpuri to Ghoti by fugitives, 16,896.

Hubli: Infection carried by policemen from railway chawls to, 2407.

Hubli: Spread of plague among the uninoculated attributable to the removal of restrictions on the burial of patients without report of death before burial, I. 409.

Human agency alone spreads plague; rats, monkeys, and squirrels hastily condemned, 23,593.

Human agency chief factor in spreading plague, 19,003.

Hyderabad State: Infection carried into the Nizam's dominions by refugees from Sholapur in British territory and from village to village by human agency, 5425, 5431, 5498.

Hyderabad State: Introduction of plague by a Banniah to Kajurg, I. 199.

Igatpuri: Plague imported from Bombay by a Muhammadan, who died of plague after arrival, 19,454.

Igatpuri: Plague imported by people who came in with plague either from Poona and Bombay, 16,864.

Ilkal: Plague introduced by Banniah who came in from Poona and died, 19,512.

Infection carried by an inoculated person, who himself remained free, 10,753.

Infection carried by human agency, 24,391-8.

Infection of villages can always be traced to human agency, 14,757.

Instances in which infection conveyed by persons suffering from plague from village to village, 5498-5506.

Instances in which infection was carried through human beings, III. 228.

Kaira district: Plague in the villages of, imported by persons who came from Umreth and other infected places, 14,053-4.

Khandraoni: Plague introduced at Khandraoni from Bombay by person who came and sickened, 9636-7.

Malegaon: Infected by refugees from Bombay, 13,774.

Nasik infected by human agency, which also spread the plague in the district, 14,693-4, 16,966.

Palanpur State: Plague introduced from Bombay by a Banniah, who fell ill after his arrival, 6414, 13,054.

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Palanpur State: Villages infected from persons who came from the town and developed the disease, 13,110.

Panjab: Introduction of plague from Hardwar to Khatkar Kalan by a man who sickened after returning from Hardwar, 9919.

Panjab: Policeman and hospital assistants often contract plague, 9968.

Panjab: Source of infection in 67 cases traced to human agency, 10,079.

Poona: Plague imported by a Mali from, to, 24,133.

Porbandar: Plague spread from the Kharwas' quarter to that of the Bhois and Borahs, 13,680.

Porbandar: Plague spread from the Kharwas to the Muhammadans, the Turias, the Julalas, the Sepoys and Memons, 13,705.

Satara district: Traced to human agency in seven villages; conveyance generally by human agency, 22,678, 22,690.

Sholapur: Conveyance by people, 24,016.

Sirohi: Disease introduced by a Banniah from Poona, who sickened after his arrival, 9702.

Surat: Carried by human agency, 2039.

Surat: Infection brought by people who came back infected from Bombay, 24,409.

Surat: Golas spread the infection to the other quarters, 16,064.

Trading classes having permission to travel principally the means of spreading the epidemic, 23,607.

Undiscovered cases most dangerous source of, 10,994.

See Banniahs and Traders.

„ Rats.

„ Clothes.

„ Merchandise.

Instances and Opinions that Human Agency not the Means by which the Plague spread:

Bulsar: Difference of caste makes it improbable that the plague could have spread from the Dhebras to the Tais by human agency, 16,179.

Surat: Theory that plague not imported by people who came from Bombay and sickened in Surat, 16,137.

The danger from infected persons of the poorer classes in India has been much over-estimated, 987.

The disease not generally spread by human agency, 1165.

Railways, spread along:

Baroda: Plague imported by railway passengers from Bombay, 15,194.

Case of conveyance of plague along the railway by sick persons, 20,086.

Carried chiefly by the railway, 5508.

Carried chiefly by railway passengers, 1307.

Carried by railway from district to district, 1644.

Jeypur: Case of plague at Jeypur in December 1896 in a man who came by rail from Bombay and then sickened, 6406-10.

Poona: First cases imported by railway passengers from Bombay, 12,857.

See Bangalore.

„ Calcutta.

„ Hubli.

„ Railway measures.

„ Importation of cases.

Sea, spread over:

Daman: Infected in 1897 by a coasting vessel from Karachi, 16,248, 16,386.

Daman: Infected by sailors from Karachi, 15,959.

Risk of passengers bringing plague by sea much less than by rail, 12,199.

Tamatave not infected by ships going direct from Bombay, 25,494, App. LXXVI., Vol. IV.

See Bombay.

„ Karachi.

„ Ships.

SPREAD OF PLAGUE—*cont.**Spread of Plague slow:*

- Slow spread in first epidemic, Karachi, 11,105.
- Slow spread in Hubli, 1645.
- Spread slow and infection localised both in towns and over the country, 26,537.

Theories and Observations regarding the Spread of Plague by agencies other than men and rats:

- Hubli: Plague spread by continuing to appear just outside the limits of an evacuated area. 1645, 1710.
- Karachi: Plague spread to the houses next evacuated blocks, 11,315.
- Plague spread by clothes, rats, and some undetermined factor in the grain shops, 11,278, 11,430.
- Porbandar: Disease spreading from a centre gradually outwards, 13,696.
- Proceeds along the ground, 2252.
- Suggestion that plague may spread from a centre by growing outwards along the ground, 1707.
- Theory that plague cases spread at Jawalapur in concentric rings round about the contaminated focus, 9276-8 (9480, 9579).
- See Inoculation with Haffkine's plague prophylactic.
- „ Wind.

SPUTUM:

Clinical Features of Plague:

- Description of sputum in pneumonic plague, 7192.
- Diplo-cocci common in the sputum of plague patients in the first stage of the disease, 25,339.
- Early stage at which the sputum becomes fetid one of the characteristics of pneumonic plague, 7465.
- In cases of hypostatic congestion little sputum, 20,822.
- Only two cases of pneumonic plague in which the sputum was copious, 9551.
- Pneumo cocci found as frequently in the ordinary normal sputum as in plague cases when the lungs and bronchi are affected, 26,301.
- Sputum in pneumonic plague offensive, 7464.
- Sputum in pneumonic plague very profuse and mixed with much blood, 1514.
- Sputum resembles sometimes that of ordinary pneumonia, in others is thin and watery, 7193.

Discovery of Bacillus in Bubonic Plague:

- Bubonic patients, not found in sputum of, 10,443, 17,265.
- Bubonic patients, no cultures from sputum, though bacilli microscopically like plague present in many cases, 26,257.

Discovery of Bacillus in Pneumonic Plague:

- Bacillus found in sputum several days before death, 17,196.
- Bacillus recoverable from sputum during life, 1436, 1789, 7196.
- Found in pure cultures in the sputum of pneumonic plague, 20,406.
- Found in the sputum of patients with pneumonic plague. 10,437. 17,258, 17,268, 25,305.
- In one case plague bacilli found in the sputum of pneumonic plague patients 28 days after lung symptoms had developed, and 3 days after the temperature had become normal, 25,342-6.
- Isolated from floor scrapings contaminated with sputum, 4547.
- Results of experiments to determine period of survival of bacillus in grain mixed with sputum, II. 18.

Spread of Infection by:

- Danger of infection from expectoration of patients, 26,720.
- Floor, clothes, and pneumonic sputa the only factors which have proved to be infective, 21,717.

SPUTUM—*cont.*

- Infection of bubonic plague through sputum and saliva, 17,985.
- Infection carried through the air by dry sputum, 20,626.
- Pneumonic plague, infection communicated by breath and sputum, 504.
- Sputum of plague patients most important means of infection. 22,371.
- See Habits of people affecting liability to plague.
- „ Pneumonic Plague, *Infectiousness of.*

SQUIBBRELS:

- Affected in Kaira district, 14,076.
- Affected at Banga, 10,136.
- Affected at Bangalore, 2603, 2654.
- Artificially inoculated die of plague, 11,523.
- Died during plague epidemic in Poona cantonment, 21,295.
- Died of plague at Ankloshwar, 14,243, 14,492.
- Died of plague in Baroda, 14,641-94.
- Died of plague at Bhiwandi, 14,493.
- Died at Hubli: On microscopical examination one found to have bacilli like plague, 3116, 3119.
- May have some influence in spreading plague, 22,064-9.
- Seen dropping dead from houses, 3597.
- Seem to die off more quickly than rats during the epidemic, 3120.

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Details of:

- Anand: Detention camp, details of staff, 14,152-7.
- Banga: List of staff employed in the operations against plague, 10,272.
- Bombay: List of staff employed in the Health Department up to the end of September 1896, and that to the end of February 1899, III. 313.
- Bombay: Population of "C" ward 140,000; only 150 men to work it with, 10,950.
- Broach: Abkari inspection, village watchmen employed at Broach on plague measures, 15,483.
- Dharwar district: Staff on plague duty in, 2164, 23,163.
- Hardwar: Statement of number and pay of persons employed in the special medical establishment at, during the two epidemics, II. 51.
- Hardwar Union: List of officials employed in, between June 1st, 1897, and April 1st, 1898, II. 51.
- Health Inspectors on their rounds obtain information of cases from residents or sweepers, 14,435.
- Panjab: Establishment employed in, 10,272.
- Poona: Enormous staff of soldiers and civilians, European and Native, 21,269.

Efficiency of:

- Bangalore: Breakdown of Health Department employes' strike in Bangalore, 2556.
- Continual change of plague officers in the wards is prejudicial to the success of the measures, 17,961.
- Insufficient staff the principal cause of the failure of plague measures, 22,081.
- Most men now engaged in plague work are absolutely incapable of diagnosing case of septicemic plague, 20,135.
- Strike of conservancy establishment in Calcutta, I. 471.

Employment of Soldiers and Police on:

- Ahmedabad: People prevented from leaving detention camps at, by police supervision, 13,898.
- Bangalore: Police and soldiers necessary to accompany the medical officer on plague duty, 2573.
- Bangalore: No complaints against the soldiers, 2633.
- Calcutta: Police activity in discovering cases objected to, I. 469.
- Cases among police and Hospital Assistants on plague duty frequent in the Panjab, 9,968.

STAFF, PLAGUE—cont.

- Cases among police on plague duty, 7220.
 Hyderabad State: Soldiers posted in every infected village to control movements of the people, 5485.
 Hyderabad State: Staff employed in looking after people taken out of their houses usually four soldiers; sometimes eight employed, 5858.
 Khandraoni: Four hundred and fifty-six soldiers employed on the plague measures, 9694.
 Kotri: Willingness to co-operate with the Government from dread of the military, 12,677.
 Malegaon: Soldiers employed as patrols, 13,808.
 Malir camp surrounded by thorn fence and guarded by police and Sepoys, 12,441-5.
 Natives have greater fear of the soldiers than of the police, 13,804.
 People more afraid of plague officers than of plague, 15,130.
 Poona: Disinfection done under supervision of British soldiers, 21,289.
 Poona: Soldiers employed on the plague staff, 21,494, 21,766.
 Rohri: Soldiers employed, 12,607.

European Supervision, Necessity for:

- Measures cannot properly be carried out without European agency, 23,660.
 Number of European staff insufficient everywhere, 24,030.
 Special European health officers employed on plague duty, 1621.
 Supervision should be carried out strictly by Europeans who understand the natives and respect their prejudices, 18,487.

Native Agency:

- Native agency not reliable without European supervision, 8068-9, 22,915.
 Native officers indispensable in dealing with the prejudices of the people, 8321.
 Native subordinates apt to levy blackmail if left alone, 8271.
 No complaints against native officials, 3956.
 Reliance on native agency only admitted to a certain extent, 23,269.

Supervision of Medical Men:

- Duties of Civil Surgeon leave him no time to look after plague, for which measures must be supervised by civil officers, 7913-4.
 Medical Officer alone should be the organiser and director of plague measures, 20,089.
 Non-medical men as inspectors a great drawback for the right diagnosis of cases, 9963.
 Plague Commissioners sometimes laymen through lack of medical men, 7969.
 See Flying columns.
 „ Disinfectors.
 „ Volunteer agency.
 „ Ward system.

STAINING CHARACTERISTICS OF BACILLUS OF PLAGUE:**Bi-polar:**

- Bi-polar staining not alone sufficient as a differential diagnostic of the plague bacillus, 8658, 27,333.
 Bi-polar staining a very characteristic feature, 5720, 27,331.
 Bi-polar staining very much less marked in the microbe of culture than in that obtained from blood of plague patients, 26,125.

Gaffky's Method:

- Gaffky's method the best for polar staining, 8360.

Thionine blue:

- Bacillus of plague stains readily, I. 441.

STALACTITE FORMATION OF BACILLUS OF PLAGUE:

- Characteristic stalactite formation, 27.
 Disputed plague cases, stalactite formation obtained from cultures in, 8424, 8426, 8428.

STALACTITE FORMATION OF BACILLUS OF PLAGUE—cont.

- Haffkine's test most reliable for differentiating the stalactites of plague bacillus from those of other microbes, 8663.
 In Jawalapur, bacilli at beginning of outbreak formed typical stalactites, but did not do so at end of the outbreak, 8662.
 Stalactites not distinguishable by mere inspection from plague stalactites formed by other microbes, 8663.

STANDARDISATION OF HAFFKINE'S FLUID:

- See Inoculation with Haffkine's plague prophylactic.

STEAM.

- Clothes, personal effects, or leather goods not spoiled by steam disinfection, 12,189.
 Clothes disinfected under steam pressure for 30 minutes on railway, 14,513.
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TEMPERATURE AFTER INOCULATION WITH HAFKINE'S PLAGUE PROPHYLACTIC.

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- Bangalore : Measures at, relaxed to allow of home segregation, 3293.
- Belgaum : Sick treated in their houses ; epidemic increased, 23,815, 22,821-3.
- Belgaum : In second epidemic patients allowed to remain in their own homes, with good results on reporting of cases and prevention of scattering of people, 23,138.
- Bhiwandi : 1,625 sick treated in their own houses, and only 153 in hospital ; results not good, 22,116-9, 23,379.
- Bombay : Good results of isolating the sick in their own homes, 17,870.
- Bombay : Isolation of plague patients in their own houses impossible in the chawls, 25,564.
- Bombay : Under the present system of not removing patient to hospital, except by the desire of his friends, concealment of cases is the exception, 25,815.
- Bulsar : Concessions, namely, treatment of sick in their own houses, given to inoculated, prevented the concealing of cases, 16,291.
- Calcutta : Airy houses in Calcutta licensed as family hospitals with good results, 6588-9.
- Calcutta : Second epidemic ; policy of treating sick in their own houses adopted, II. 532.
- Constant intercourse between the sick and healthy outside, the evil of home treatment, 12,178.
- Home treatment does not tend to spread plague, and renders carrying out of disinfection easier, II. 537.
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- Home treatment ought not to be allowed in houses of a long row, 25,831.
- Isolation in people's own houses under favourable conditions and proper precautions not dangerous, 2,510.
- Permission to some people to treat their sick in their houses makes it more difficult to enforce isolation of others, 19,865.
- Poona : Home treatment allowed with antiseptic precautions, 21,940.
- Poona : In two cases where patients were allowed to be treated in their own houses, the results were so disastrous that the trial had to be given up, 25,828-9.
- Poona : Parsees in Poona treated at home successfully, as they adopt hygienic measures while treating the sick at home, 12,879.
- Treating patients in their houses a very bad measure, 22,118.
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TYPES OF PLAGUE :

- See Atypical forms of plague.
- „ Bubonic plague.
- „ Bullæ.
- „ Clinical features of plague.
- „ Pestis minor.
- „ Pneumonic plague.
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TYPES OF PLAGUE IN PARTICULAR EPIDEMICS :

- Anantapur district : Pneumonic cases not more than 4 or 5 per cent., 4462.
- Ankleshwar : Very few pneumonic cases, 14,268.
- Backergunge district : Course of pneumonic epidemic, I. 262-6.
- Bombay : First epidemic bubonic, 19,067.
- Bombay : In first epidemic cases easily distinguishable, 19,471.
- Bombay : Second epidemic bubonic, and pneumonic from middle of epidemic in February and March, 1898, 19,067-70.
- Bombay : In second epidemic no buboes or swellings, and cases hard to diagnose, 19,471.

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- Bombay : Third epidemic virulent, with much pneumonia 17,888.
- Bombay : Third epidemic almost pneumonic in character, but with enlarged glands ; in February 1893 mainly bubonic, very fatal, 19,071-5, 19,077.
- Bombay : Epidemic 1898-9, at first primary pneumonia very frequent, at end of February very few cases, 21,043.
- Bulsar : Non-bubonic plague appeared first in 1897, 16,314.
- Chipagiri : Little pneumonic plague, 4461-2.
- Cutch : At first of a virulent type, then chiefly pneumonic, then chiefly bubonic ; in second epidemic more bubonic and less virulent, 13,488-93.
- Cutch : In Salaya chiefly pneumonic and septicæmic, 13,490.
- Cutch : In the epidemic at Sarli no pneumonic cases 13,619.
- Daman : Epidemic of 1898 ; a form of plague noticed, accompanied by bullous inflammations, 16,794.
- Daman : Pneumonic plague with other types of plague found, 18,794, 18,842.
- Gharibabad : Was infected with pneumonic plague, 11,163.
- Hardwar : Majority of cases bubonic, pneumonic cases noted after January 1898, 9170-1.
- Hyderabad (Sind) : In 1897 epidemic bubonic, with few pneumonic cases, 18,093-4, 18,151-3.
- Hyderabad (Sind) : A fairly large number of pneumonic cases, 18,439.
- Kotri : Cases mostly bubonic, 12,700.
- Nasik : Only 5 pneumonic cases which did not occur in the same house, 14,705-11.
- Poona : Virulence of type of imported cases since February 1899, shown by the proportion of deaths, 25,827.
- Porbandar : Only 6 pneumonic cases treated in hospital, 13,724-7.
- Satara : Pneumonic plague cases not numerous, 22,153.
- Sukkar : Pneumonic plague fairly common, 18,489.

Pneumonic Plague : Prevalence of Pneumonic Cases in Particular Epidemics :

- Cases with lung symptoms vary in frequency at different periods of an epidemic, 21,042.
- Cutch : Pneumonic cases most prevalent in, at height of epidemic 18,202-4, I. 352.
- Palampur : Pneumonic cases observed in, chiefly in the height of epidemic 13,104-5.
- Poona : Pneumonic cases more frequent in, when the epidemic most severe, 12,915.
- See Pestis minor.
- „ Virulence of plague in different phases of an epidemic.

UMARKHADI COMMON JAIL, BOMBAY, PLAGUE IN, AND INOCULATION WITH MR. HAFFKINE'S PROPHYLACTIC IN.

- A number of cases took place in one particular spot in spite of its disinfection with quick lime, 20,332-46.
- Clinical records of two persons inoculated in the Jail and subsequently attacked by plague, one case resembling mumps, 69, 7236, I. and II.
- Correspondence with Mr. Haffkine regarding the correctness of the inoculation returns relating to the Umarchhadi Jail, III. 658-61.
- Inoculations performed in the Umarchhadi Jail, 69.
- No selection of cases for inoculation in the Umarchhadi Jail, 20,115-31, 26,500.
- Particulars of the inoculations in the Umarchhadi Jail in January 1898, 17,099-112.
- Prisoners not selected for inoculation, 20,311-6.
- Re-inoculations in the Umarchhadi Jail, 11,714-27.
- Report by Lieut.-Colonel Waters, I.M.S., on the inoculations in the Umarchhadi Jail, 113, 117.
- Results of inoculation, 20,317-31.
- Statement of particulars regarding inoculation and plague in the Umarchhadi Jail, Bombay, III. 441-4.
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 Inoculations performed at Undhera, 69.
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- Bangalore : People object to removal of roofs, 3419.
 Better class houses disinfected with chemicals, poorer houses unroofed, 23,924.
 Bombay Presidency : Houses unroofed, 8.
 Dharwar : Houses unroofed, 23,163, 23,748, 23,773.
 Dharwar : In the villages chief reliance on unroofing, 1680-2.
 Entire unroofing of infected houses the most effective measure of disinfection, 22,667.
 Kalindri : Resorted to as disinfecting method, 9894.
 Karad : Roofs taken off and opened up, 21,078.
 Panjab : Entire roof removed and ventilation holes made, 10,027.
 Poona : Houses unroofed or partially unroofed, 10,933, 21,289.
 Satara : Sadar Bazar in first epidemic unroofed as a precaution, and escaped ; in second epidemic not unroofed, and suffered, 22,273-4.
 Satara : Strips of the roof, three feet broad, taken off, 22,157.
 Sholapur : Poorer houses unroofed, 23,924.
 Unroofing recommended for villages as the application of the measure can be easily checked, 21,156.
 Unroofing the great thing as disinfecting method, 1681.
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UNTILING :

- All small houses in Bombay untiled, 1240.
 Calcutta : Untiling resorted to, 6532.
 Cutch Mandvi : Tiles removed about a yard in width, 13,474.
 Dharwar : Houses untiled, 23,434.
 Disinfection by untiling roofs at Sholapur, 8.
 Guntakal : Openings made in roofs, 5099.
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 The removing of the tiles from the roofs only good in the case of basement houses, 13,474.
 Untiling adopted in Bangalore and Mysore, 25,003.

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- Untiling useful both in admitting light and air, and also in driving rats out of roofs, 1220.
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 „ Ventilation.

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Clinical Features of Plague :

Urine diminished in quantity, of high specific gravity, and intensely acid, I. 380.

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- Bacillus found in, before death, 3556-63, 3647-9.
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 Found in urine when it contains blood, 22,367.
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 Results of 50 examinations of urine at Bombay Hospital, I. 396-7.

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- Bacillus of plague grows more slowly when obtained from the urine than from the blood, 26,337.
 Lives 24 hours in urine at least, 3611.

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Recovery from the urethra of a patient dead of bubonic plague, 17,258.

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- Of urinary system, I. 367.
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Attitude of the People towards :

- Ahmednagar : People close up windows and ventilation holes made, and enforced opening of windows necessary every morning, but people may in time come to appreciate ventilation openings, 24,203-9, 24,361-2.
 Bangalore : People now ask for their houses to be ventilated, 3269.
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 Baroda : The people, except the Machis, seem to approve of improvements in ventilation, 19,159-65.
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VENTILATION—*cont.*

Native servants close up all ventilation openings in their quarters, 20,539.
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 People close up ventilation openings at night, 19,515.
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Disinfection by:

Ahmednagar: Ventilation resorted to as disinfecting method, 13,923.
 Ahmednagar: Openings made in houses to admit the sun, 24,274.
 Baroda: Uninfected houses cleansed, white-washed, and ventilated as disinfecting precaution, 14,631.
 Panjab: Ventilation holes made in roofs and side walls to disinfect, 10,481.
 Surat: Houses opened up, and then swept out and doused with perchloride solution, 24,414.

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Bad ventilation the causes of the disease 14,716.
 Bad ventilation one of the principal factors in the propagation of the disease, 14,388.
 Cases less frequent among those who sleep in the open air, 7517.
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 No plague after ventilation of dug-up floors in Kalgeri, Dharwar, 23,778.
 Over-crowding and bad ventilation the causes of the disease, 14,716.
 Plague at Kiamari principally in badly-ventilated houses, 11,971.
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 Satara Jail: Infection did not spread on account of good ventilation, 23,330.
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Ahmednagar: Ventilation arrangements in houses bad, 24,275, 24,347.
 Bangalore: Ventilation in houses bad, 3254.
 Bombay: Houses badly ventilated, 26,645-8.
 Bombay: Houses inefficiently ventilated from narrow galis, 835.
 Bombay: No ventilation at night in bad houses, 847.
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 Cutch Mandvi: No ventilation in houses, except by the door, 13,355.
 Dharwar: Ventilation bad, 1711, 23,185, 23,518.
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 Karachi: No free passage for air in houses at Kiamari, 11,971.
 Karachi: Ventilation much improved since epidemic, 22,664.
 Nasik: No ventilation except by the door, 13,786-7, 16,983.
 Satara district: Many houses in the Taluka have not been ventilated for years, 22,734.
 Surat: Most localities absolutely without ventilation, 15,937, 16,107-8.
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VITALITY OF BACILLUS OF PLAGUE.

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VOLUNTARY EVACUATION:

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- Baroda City: Forty thousand people in fields round the city, not in Government camps, 14,677.
 Baroda: Unauthorised camp at, under no organised control or supervision, 14,627.
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 Broach: Camp arrangements at, voluntarily and successfully carried out, 15,484.
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 Karachi: Trans Lyari, good success of people appointing their own plague committee in the voluntary camps of the, 11,258.
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- Bangalore: Done promptly and voluntarily by villages around, 3303.
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