

STONE CARVING AND INLAYING

IN THE

BOMBAY PRESIDENCY

BY

J. H. E. TUPPER, I. C. S.

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A MONOGRAPH

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J. H. E. TUPPER, I. C. S.

1906.

MONOGRAPH

ON

STONE CARVING AND INLAYING.

"In the elder days of Art,
Builders wrought with greatest care
Each minute and unseen part;
For the Gods see everywhere."

LONGFELLOW.

Part I.

COLLAPSE OF THE INDUSTRY AND ITS CAUSES.

STONE CARVING, for centuries the premier art industry of the country (if home-industries such as weaving are excluded), is reported by District officers throughout the Presidency to be obsolete or obsolescent. The majority of their reports are so little short of mere death certificates, that it must not be deemed surprising if a monograph on the subject partakes of the nature of an epitaph.

In Sind, the geological formation of the province is in itself a sufficient explanation of the rare employment of stone as a medium of decorative art, but the Presidency as a whole suffers from no scarcity of material. Stone is present in abundance, and has been freely used from early times in sculpture, and in architectural construction and adornment. The perfection to which the art of stone carving was carried and the proportions attained by the industry can be readily if roughly gauged by the extent of the architectural remains still in existence, and the profusion and finish of the ornamental work with which they are enriched. The proportion which the decorative industry bore to the constructive defies accurate computation, but judged by European standards it must have been extraordinarily high. It is not too much to say that the object of the Hindu architect was often the mere provision of space for the exercise of the art of the carver, whose chisel charged each stone to its utmost capacity with his message of infinite labour and the mystic meaning which alone could render it worthy of a place in the house of the god he worshipped. Fergusson estimates that in Orissa and in Southern India the cost of carving some of the richest buildings must have been equal to three times the cost of construction. It may be safely hazarded therefore that the life of the in-

dustry can only be reckoned in centuries, and that the number of craftsmen to whom it afforded continuous employment is more likely to have run into six figures than five.

The practical annihilation of an industry so widespread and so well established cannot fail to excite both amazement and regret. Some deterioration in the art, some shrinkage in the dimensions of the industry as compared with former times, were indeed to be anticipated; but the almost universal disappearance reported throughout the Presidency would suggest the operation of forces nothing less than cataclysmic. It will be prudent to subject to such tests as may be practicable the evidence upon which so remarkable a phenomenon claims credence. First however it is necessary to define, with what accuracy the reports permit, the limits within which the industry is stated to retain any trace of its former vitality.

Stone carving is reported to be non-existent throughout the Presidency, except in the following seven districts:—

Poona.—There is no stone carving in the District. But in Poona city, "a few of the rich and well-to-do people get their *Jotas* and arches, etc., built of "carved stones."

Dharwar.—One family at Ron alone is capable of artistic work. Small temples of recent construction contain pillars and door frames carved in floral designs by rural masons.

Ahmednagar.—The art is extinct, save perhaps in Sangamner. If carving is required, artists have to be imported from Northern India.

Surat.—The only carving is to be found in Jain temples. When a new temple is built, foreign artists are brought in who work under the Surat masons.

Bijapur.—The few local men available are employed on restoration work, which is reported to be

of a mediocre order. For new work it is usual to import foreign workmen.

Bombay.—The only carving mentioned occurs in Hindu temples, and in Government, public and commercial buildings. As regards the former "the carving of the modern temples is conventional and lifeless, and the designs show no originality of treatment." As regards the latter "the Victoria Terminus is still far the richest in detail of carving. The other buildings, of which the B. B. & C. I. Railway offices and the Taj Mahal Hotel are perhaps the most important of recent years, depend for their effect on the lines of their architecture, and their ornamentation is more in the direction of the insertion of marble pillars, and the use and variety of coloured stones than in the employment of carving."

Ahmedabad.—The industry, though much shrunken in comparison with former times, is still active in both city and district. It presents many features of interest which are dealt with at length below.

It would appear from the above analysis that in five out of the seven districts in this Presidency in which stone carving is still recognized to exist, it has fallen to a negligible quantity. In Bombay and in Ahmedabad alone does it appear to retain any real vitality, and only in Ahmedabad is the industry indigenous, the Bombay workmen being neither natives nor permanent residents of that city. In the two places combined the number of workers fluctuates probably between 500 and 1,000. So contracted are the present limits of what was for centuries the leading hereditary art industry in the greater part of the region which now constitutes the Presidency proper.

Such is the conclusion compelled by the district reports. Substantially true no doubt, it is yet of so startling a nature as to fail to command acceptance in its entirety without the support of corroborative evidence. Stone architecture implies stone ornament, and it seems incredible, in a country in which the industry has once been firmly established, that stone carving should be practically eliminated, while stone still continues to be used largely for architectural purposes. If rough stone had been substituted for dressed stone, the disappearance might be intelligible; but there is nothing to warrant the supposition.

A resolute avoidance of carved stone ornament combined with the continued employment of

dressed stone in building can hardly be explained by anything short of a psychological upheaval in the character, habits and tastes of the entire people. Had the country been converted to a rigid Utilitarianism, or had it been swept by a wave of Puritanism, or plunged into abject poverty, the phenomenon would seem less unnatural, but in the absence of any violent subversive influence it is probably unique in the history of the world. Vicissitudes, marked fluctuations of popularity and of prosperity, are the common fate of arts and industries, and if investigation into the present condition of stone carving led to the conclusion that it had reached its apogee, the matter might cause regret but hardly surprise. But the story is one, not of depression, but of extermination. The magnitude of the result is such that the causes known to be in operation do not seem adequate for its production, and the disturbance of equilibrium which is the necessary accompaniment of the revolution in social psychology which such a change connotes, hardly reveals itself in a degree sufficiently catastrophic to be commensurate with the effects reported.

Considerations such as these suggest the enquiry whether the district reports may not have overstated the case; whether the information upon which they are based is trustworthy enough to support a conclusion that appears, in its extreme form, to contradict both experience and nature. It must be recorded that they represent not single but reiterated assurances from their respective districts, since in all cases further reference was made drawing attention to considerations with which the facts reported seemed to need reconciliation. In spite however of the added weight which the evidence thus acquires, it is important to remember that in almost every case the ultimate source of information is the chief native officer of the *taluka*, the Mamlatdar. He is a busy man, and subjects such as architecture, stone carving and inlaying are the last to attract his attention. He has invariably received a highly specialised education to prepare him for official life, and the form of training that he has undergone is one not designed to stimulate interest in these directions. When asked to report on a subject of which he has no previous knowledge, he is not unlikely to mistake subjective ignorance for objective non-existence, and to answer that there is no stone carving in his *taluka* because he has noticed none, a conclusion in which he is probably confirmed by subordinates no better informed than himself. How

easy it is for work of this kind to escape notice is shown by one of the *taluka* reports in the Ahmedabad District. It was stated that only one temple had been constructed in the *taluka* in the last twenty years; but shortly afterwards the writer of this monograph, having occasion to interview a well-known stone carver, learnt of the existence of two other temples in the same *taluka*, the one just completed, the other still in process of construction in the *taluka* town itself and under the very eyes of the Mamlatdar! It is upon information derived from such dubious sources that the district reports are based, and except in the rare cases in which the district officer himself takes a personal interest in the subject, it would seem dangerous to accept without considerable reservation the death certificates which so many of the reports embody.

For information on a question of employment it is natural to turn to the Census of 1901. The Bombay returns (Part II, Table XV, Group IX, 166) show the totals for districts under the head of "Stone and Marble Workers." In the Presidency proper, excluding Sind, addition of the totals gives 6,827 workers and 12,548 dependants in the rural districts, and 1,246 workers with 1,822 dependants in the larger towns. The total number of workers, therefore, amounts to 8,073, with 14,370 dependants. Explanation of these figures was invited in nearly all districts, since the figures reported were much in defect of those of the Census. It was at the same time observed that these figures did not include 'masons and builders' or 'labourers and other subordinates on stone and marble works' who are shown in the Census under Nos. 153 and 154 respectively. The replies received take one of two lines; either the Census figures are challenged, or it is suggested that 'Stone and Marble workers' include stone-cutters, stone-polishers and others. It appears doubtful however whether the Census enumerator would differentiate the stone-cutter and polisher from the mason. Doubtless, the makers of images, and of grindstones and small stone utensils help to swell the number, but if the Census figures are correct, and there seems no sufficient reason to doubt them, it may well be that stone-carvers constitute a proportion of the total considerably larger than the district reports recognise. The figures certainly tend to favour the conclusion that there may be stone carvers and stone carving that have escaped the district officers' observation.

Whichever view be accepted, there still remains the necessity of accounting for the collapse of a mighty industry. An expression of opinion as to the causes, economic, social, political and æsthetic, which could have contributed to this result, was invited from all districts. Various reasons were assigned in reply: wars, troublous times, the ravages of fanatic Musalmans: the decay of religious sentiment: the disappearance of princes and chiefs, who were the patrons of the art: the growing poverty of the country.

It is at least debatable whether the excursions and alarms of war were in reality so detrimental to architecture and stone carving as is generally assumed. The conqueror almost invariably sought to perpetuate his victories in stone, and the lives at least of stone carvers and masons were protected by their craft. Even the "frightful savage Timur", according to Fergusson, "though he generally massacred the inhabitants of any town that resisted him, always spared the architects and artists, and set them to work on the embellishment of his capitals." Still more doubtful is the wanton destruction which it is usual to attribute to the iconoclastic zeal of Musalman invaders. So eminent an authority as Fergusson declines to subscribe to the assumption. "That the Moslems did destroy Hindu temples may be admitted, but it is not clear that this was done wantonly. In all instances that are authenticated, it was to gain ready-made materials for their mosques." In support of this view instances are given from Gwalior, Chittor and Ellora. "The rock at Gwalior was one of the earliest conquests of the Moslems, and they held it more or less directly for five centuries. They built palaces and mosques within its precincts, yet the most conspicuous objects on the hill are Hindu temples, that were erected before they obtained possession of it. In like manner Chittor was thrice besieged and thrice sacked by the Mahomedans, but its numerous buildings are intact, and I do not recollect observing a single instance of wanton destruction in the place. An even more striking instance is found at Ellora. Though Aurungzebe, the most bigoted of his race, built his capital in its neighbourhood, and lies buried within sight of the caves, there is no proof that he or any of his race were the authors of any of the damage that has been done to the idols there. Practically, they are intact, or have only received such mutilation

"as is easily accounted for from other causes." * In face of such evidence it will not be safe to attribute the decline of stone carving in any great degree to the destructive agency of war or of religious bigotry.

Another explanation advanced is the decay of religion. It is curious to find reasons so opposite as excess of religious zeal and the relaxation of religious sentiment laid under contribution to explain one and the same phenomenon. Of the potency of the cause assigned there is a sufficient guarantee in the intimate connection that has always subsisted between Indian art and Indian religion. Sir George Birdwood opens his work on the Industrial Arts of India with the words "The arts of India are the illustration of the religious life of the Hindus." The tie is perhaps closer in the case of architecture, sculpture and stone carving than with any other art. Grünwedel in his *Buddhistische Kunst in Indien* writes:—

"Der religiöse Charakter, welcher tief im nationalen Leben der indischen Völker begründet ist, ist auch für die Kunst durchweg Norm geblieben. . . Die altindische Kunst ist also stets eine rein religiöse Kunst gewesen, sowohl die Architektur, wie die mit ihr stets und innig verbundene Skulptur hat nie und nirgends Profanzwecken gedient." †

Not only is stone carving displayed in the greatest perfection and profusion in the decoration of religious edifices, but wherever found it is invariably surcharged with religious symbolism. It is in the religious impulse that the art finds its motive and its inspiration; if that stimulus be withdrawn, it carries with it the very life and soul of the art. The explanation is tempting in its simplicity and completeness, but it is the fact of decay rather than its potency that must be questioned. Is religion, or rather are the various religions, moribund? Is Hinduism or Mahomedanism losing its hold on the minds of the people? Are the Brahmin, the Jain, and the Lingayat less tenacious of their faith? He would be a bold man who would assert it, and unless the question can be met with an

* *History of Indian and Eastern Architecture*. Fergusson, p. 410.

† *Buddhistische Kunst in Indien*, von Albert Grünwedel, p. 1:

"Indian art has always been ruled by the religious character that lies deep at the root of Indian national life. . . . In accordance with the purely religious character of ancient Indian art, architecture and the kindred art of sculpture were never subordinated to secular purposes."

unhesitating affirmative, it were better not to advance the decay of religion as an explanation of artistic or industrial collapse.

There is however another and a more suggestive aspect of the question. Religion may retain its ancient vitality, but it has lost its former association with the state, and it is in consequence no longer in a position to commandeer the state resources for the construction and ornamentation of sacred buildings. So far as religion is concerned, it is perhaps not so much the impulse that is lacking as the opportunity for its exercise. The impulse may remain, but severance from the state may have cut the nerves that used to translate it into action. If this can be accepted as a satisfactory account of at least one of the contributory factors, the other reasons advanced fall into their true perspective. It is said that the disappearance of Princes and Chiefs has deprived the art of its natural patrons; that the poverty of the country can no longer bear the burden of costly ornamental works. Apart from any religious motive, it is true, the noble patron constructed elaborately ornamented palaces and public works, but his most important function, from the point of view of Architecture and Stone carving, was that he represented the secular fountain head through whom flowed the stream of wealth which was absorbed by religion into the creation of the magnificent sacred buildings, whose construction afforded the architect and the stone-carver their principal means of livelihood. The fall of the Prince, and the cutting off of the stream at its source, naturally gives rise to the cry of poverty, a lament which in reality means nothing more than that the wealth of the state is diverted into other and more productive channels.

If this view commend itself, it would follow that it is not so much the disappearance of a particular class, (the solution so strongly advocated by Fergusson), as the substitution of a different political constitution, that is the dominating factor in the problem. The disappearance of one class, even when that class is the landed aristocracy, is not sufficient of itself to account for the extinction of patronage; and it must be remembered that the ancient nobility, though they have suffered in status and wealth, are not as a class either ruined or extinct. It is not yet beyond their power to extend patronage if they would. The fact that they do not is

in consonance with the theory advanced, that so far from being universally or even generally the real sources of art patronage, they are rather to be regarded as the channels through which religion, the true patron of Indian art, was able to tap the resources of the state. The decay of the native nobility synchronises with decadence in the arts, but to infer that the former is the cause of the latter is not scientific. It is more true to regard both as due to one common cause, the establishment of a powerful central Government. This, from the very nature of its existence, has ever been precluded from identifying itself with any one religion. Religion in consequence, divorced from the state, was cut off from the material resources upon which it had previously relied for its patronage of the arts. Architecture and stone carving, the arts most directly dependent upon it, were naturally the first to suffer from inanition. The causal connection between the present position of religion and that of the arts is hardly open to question, but the decline of the latter must be attributed, not to the decay of faith but rather to the change of status and loss of temporal power which religion has suffered as the consequence of its severance from the state.

It may be interesting to notice in parenthesis that in one direction the influence of religion has chanced to operate to the detriment of stone carving. While religion was identified with the state it was to their common interest to monopolise the use of stone in architecture, and the employment of stone in domestic building was consequently discouraged and restricted. The same tendency has been observed in Burmah, of which Fergusson writes "The custom has now passed into a law, that no one shall have the power of erecting buildings of stone or brick, except it be the King himself, or unless the edifices be of a purely religious character."*

Among Hindus the prohibition meets with varying degrees of respect in different localities. Some difficulty has been experienced in tracing its origin to authority; but the following *shlokas* from the Shilpa Shastra throw some light on the subject:—

श्लोक—प्रासादे च मठे नरेन्द्रभवने शैलः शुभो नो गृहे ॥

तस्मिन्भिस्त्रिषु बाह्यकासु शुभदः प्राग्भूमिकुम्भ्यां तथा ॥२०॥

"In a temple, a monastery, or a palace, stone is good; but not in a private building. Yet there (*i.e.* in a private building) it is good on the exterior of a

"wall or in the bases (of the pillars) on the ground floor."

श्लोक—उत्तानपट्टो नृपमदिरे ऽसौ । हस्ते च हस्ते द्वियवोन्नतः स्यात् ॥
पाषाणतः सौख्यकरो नृपाणां । धनक्षयं सो ऽपि करोति मेहे ॥२१॥

"The slab of stone over the ceiling-beam in a King's palace should be two *yava* thick for each *hasta* in length. A slab of such (dimensions) brings happiness to a King, but in a private house it is destructive of wealth."

But for the limitation thus imposed upon the use of stone in domestic architecture, it is possible that carving might have found an opening in this direction as other fields contracted. In Ahmedabad city and in those parts of the district with which the writer is personally acquainted, the use of stone in Hindu houses is almost entirely confined to the bases of verandah pillars and of door-jambes. Even in the smallest houses in the most out-of-the-way villages, the bases of the wooden verandah pillars are frequently of stone, and they are almost invariably carved. In the larger houses the practice is almost universal, and the carving is often tasteful and elaborate though seldom of great depth. The overmastering instinct here displayed to cover every available piece of stone with carving is an indication that an extensive field might have been thrown open to the carver but for the unfortunate ceremonial restriction.

The enquiry into the causes that have contributed to the collapse of this great art industry has so far been confined to considerations of politics and religion. The explanation of the phenomenon offered is incomplete till it is brought into organic relation with the economic, social and æsthetic aspects of the problem. It might appear a legitimate inference from the argument, so far as it has proceeded, that the only factors essential to the existence of the industry were vitality in the prevalent faith and its identification with the state, the first supplying the motive emotional force necessary to creative art, the second enabling religion to furnish scope for its exercise through its command of the state resources. But unless the artistic faculty be present, and unless the core of public taste be sound, religion will find no art to stimulate and its forces must seek other outlets. There must exist in the heart of the community an instinctive recognition of the appropriate, and a spontaneous appreciation of the beautiful, to constitute the necessary æsthetic basis of artistic

* *History of Indian and Eastern Architecture.* Fergusson, p. 626.

Bombay is contained in the statement "in one mosque there is reported to be good inlaid flower-work of the Agra style"; and it may be inferred that neither its quantity nor its quality merits attention.

In Surat the only inlaid work is found in Jain temples. It is not indigenous, the workmen being imported from Agra. For this reason the local report gives no account of the work, which to judge from the list of materials said to be employed, might appear to be more elaborate than that of Ahmedabad. In the latter place there is a fair quantity of inlaying, some of the Jain temples being mainly dependent upon this form of art for their interior decoration. The work is all Florentine in character, and true mosaic appears to be unknown. There are no data available for estimating the previous dimensions of the industry in this Presidency, but it may be presumed that it was never very extensive. The art probably drifted in this direction from the North, where it reached a high degree of perfection in Agra and Delhi in the early part of the 17th century. The subject is dealt with in parts II and III.

Part II.

MODERN STONE CARVING AND INLAYING IN AHMEDABAD.

The arts of stone carving and inlaying retain considerable vitality both in Ahmedabad city and in the larger towns of the district. Both are practically confined to architectural decoration; inlaying exclusively to religious architecture. Stone carving in civil architecture is scanty and unimportant. In domestic architecture it is generally (invariably, it is believed, in Hindu dwellings) limited to the decoration of the bases of verandah pillars and door-jambs, but applied to these features it is common, and, as regards the former, almost universal in the parts of the district with which the writer is acquainted. Such bases are stocked in considerable numbers in the workshops of the Ahmedabad masons, to meet the demands of the villages and smaller houses in the town for which they are frequently purchased ready carved. Where this course is not followed, the work is entrusted to the local mason, who is usually capable of executing a simple geometrical pattern, and some times work of a higher order. Such work is

slight in itself, but the extent of the demand renders it a valuable means of keeping alive the tradition of carving. Almost the only other direction in which stone carving is still in request in the villages appears to be in the decoration of pigeon houses, many of which bear a fair amount of stone ornament; but the execution is usually considered to be beyond the capacities of the local men, and carvers are imported from some neighbouring town. Stepwells, which it used to be the fashion to load with carved ornament, have been discouraged for sanitary reasons, and the few examples of recent construction make no pretence to decoration. As an indication of the extent to which hereditary aptitude in the art still exists in the villages and small towns, it may be interesting to describe the experience of the Rev. J. S. Stevenson of Prantij. Pierced windows (*jali* work) were needed for the new Mission church and a Celtic cross for the cemetery. As usual, this was declared to be a task beyond the powers of the local men, and the importation of artists from a neighbouring native state was advised. The Missionary however determined to trust to local talent; and plates XXI and XXII will show that his confidence was not misplaced. Nor was the excellence of the work attributable to a mere happy accident in the selection of the workman, for the mason first employed died before the task was done, and it was completed by his successor as a matter of course. The plates hardly do justice to the pierced windows, the upper lights of which are really the most attractive. They are reminiscent of English cathedral designs, so that the masons cannot be said to have relied upon traditional patterns either in this case or in that of the Celtic cross. The side panel of the latter shown in plate XXI-1 exhibits grace, simplicity and restraint. The cost too is remarkable. The six windows of four panels each, in material and workmanship combined failed to absorb one five-pound note, and the cross, which had to be supported on a deep brick foundation on account of the sandy soil, cost about the same amount. It is however in religious architecture in the large towns that one must seek the stronghold of the art, for there alone is it manifested in quantity or quality worthy examination. Among religious communities, the Jains are by far the most active in building. Here and there a mosque is raised or a Swaminarayan temple, but they seldom contain stone carving or inlaying of any extent or merit. In the restoration and repair of ancient mosques a certain amount of

carving, rather uneven in character, has been carried out by the Public Works Department and as many as 150 or 200 workmen at a time have been employed upon the work: but the study of modern stone carving and inlaying in Ahmedabad is in reality the study of modern Jain temple architecture.

To a right understanding of the ornament employed as regards either principles or elements, some account of the constructive features of the temples is essential. To say that here as elsewhere ornament is conditioned by the lines of architectural structure is to state an apparent truism, but it is one whose meaning may be better grasped by concrete illustrations of its application, such for example as the traditional bracket capital, in origin an essentially constructive expedient for carrying a square architrave, the angle leaf by which transition is effected from the circular shaft to the square abacus, the angular strut and the strut-arch which correct what appears to the eye a weakness in structure, or the reproduction in internal decoration of external constructive features in the shape of miniature-*shikhra*s and tiny pavilions. Ornament, unless it is to be merely pretty and meaningless, (which has seldom been the case in Indian architecture) must be the natural outgrowth of structural design; just as the foliage of a tree is the outgrowth of its stem and branches. In order to render modern ornament intelligible it will therefore be necessary to pass in brief review the changes of construction characteristic of the modern Jain temples of Ahmedabad, which have exercised so marked an effect upon the style of decoration.

Within the Municipal limits of Ahmedabad itself there are some twenty Jain temples built during the last thirty years or still building, some of them new foundations, others replacing previously existing wooden temples. The structural differences between these temples and the traditional Jain model are such as to constitute a distinct variety of style.

The most essential difference, from which many others are directly or indirectly derivative, may be seen by a comparison of plate II with any of the temples illustrated in the ensuing plates. Plate II shows the interior of Hathising's temple, built some sixty years ago on the characteristic Jain plan. The distinctive open porch, crowned with domes, is surrounded at an interval by cloisters, and the resulting effect is one of space and

grandeur, as the plate fairly indicates. The more modern temples are constructed for the convenience of small knots of worshippers in crowded *pols*, each of which represents a social *imperium in imperio*. Cramped within the narrowest limits, they have to adapt themselves to the disabilities of their situation. The whole temple, consisting only of shrine, domed porch and sometimes aisles, is enclosed within four walls; the external pillars become wall-pilasters, and the open character of the porch is lost, though the latter gains in relative dimensions at the expense of the shrine, the square form of which is exchanged for a narrow oblong. The result is the disappearance of the square-based curvilinear towers, the *shikhra*s, of which Fergusson writes as invariably surmounting the cells in which the images are placed. The loss of this beautiful architectural device with its wealth of peculiar ornamentation is very noticeable. The current explanation that the shadow of a *shikhra* falling on a private house would bring disaster, may be accepted in so far as it indicates the connection of the phenomenon with the confined situation, but it is more probable that considerations other than that popularly assigned, though arising out of the same cause, are really responsible for the result. The massive square base necessitated by the weight and conformation of the superstructure would occupy room that could be spared with difficulty in many of these temples, and by no conceivable expedient in most. Moreover the receding lines of the *shikhra* would be apt to render it invisible from the narrow lanes that surround the buildings. The same consideration has modified the dome, which indeed has not suffered constructive elimination because it is considered essential to internal effect; but being practically invisible from the outside it no longer carries any external ornament. Internally also the concentric rings of ornament which followed the horizontal construction of the dome, and which in the words of Fergusson "rendered some of the "Indian domes the most exquisite specimens of "elaborate roofing that can anywhere be seen," have disappeared. The dome is now built of brick and covered with chunam, and above the octagonal architrave from which it springs it is rare to find any trace of ornament except the stone pendant. In some temples also, of which plate V is a specimen, the domical style is abandoned in favour of the *nauchauki* (nine equal squares), the 12

pillared dome-bearing portico being replaced by one of 16 pillars, or rather 4 central pillars and 12 pilasters carrying a flat roof.

It is not a little remarkable that of the two most characteristic and most highly ornate features of the style, one should have been eliminated, and the other modified almost beyond recognition, in obedience to the exigencies of construction.

From these introductory remarks it will be expedient to pass to a description of some typical carved stone and inlaid work, which will supply the materials for an estimate of the general character and present tendencies of these arts. Inlaying shares with stone-carving, and the use of polished and carved marble, the function of internal decoration. Exterior work, the enrichment of façades, is reserved exclusively to the stone-carver. Of such there is far more than one would expect, more in fact than the cramped position of these temples seems to warrant. Rising above the spectator's head, as he stands with his back against the opposite wall of a narrow lane, and only a few feet distant from the eye, much of this carving is very difficult to see, and impossible to photograph. Plate I shows the external porch of Hathising's temple, the best specimen of modern stone carving in Ahmedabad. The temple was built some sixty years ago, but the actual entrance of the porch, all that part which rests on the four foremost pillars, was erected only thirty years back by a *mistri* named Chhagan, who is still working in Ahmedabad. It is merely an extension of the old design, but in richness, depth, and finish the carving shows little sign of deterioration. It is interesting to compare this with plate XIV, the façade of Ajitnath's temple in Kalusi Pol, which is of the same date and the work of the same *mistri*. The ornamentation is profuse, and there is some effective arabesque and diaper work, but the carving has not the same depth, and the whole is wanting in dignity. The figures betray lack of proportion and the effect is greatly marred by the hideous heads on the lower and upper capitals of the columns, with lips picked out in red and eyelids and eyebrows in black, giving prominence to the worst part of the work. Other typical exteriors will be found in plates VIII, XIII, XV, XVII-1. A preference for circular columns will be noticed, precisely the opposite tendency to that exhibited in interiors, which nearly always retain the square,

octagonal and sixteen-sided form. Plate XIII shows an example of the latter. Plate VIII-1 and 2 shows a favourite variety of the circular column, a shallow-fluted shaft springing from a fronded cup and terminating in a foliate bell-capital, upon which is superimposed a weak tracket-capital. Upon the latter rests an octagonal dwarf-column, devoid of ornament, but partly concealed by the figures that stand on the lower bracket. The dwarf-column is crowned by a solid bracket capital, almost plain, carrying the architrave. Plate XVII-1 shows the same variety with scroll work in the flutings. The same temple is remarkable for the appearance of the classic acanthus at the base of the columns and below the flutings of the pilasters. The lobes almost overlap, and the eyes that separate them are characteristic. It will be noticed that, unlike Hathising's temple (plates I and II), the exterior of the more modern temples is no longer an adequate expression of the interior.

The general impression on entering a modern temple is rather that of elaborate cabinet-making than of architecture. The eye is attracted by carved or inlaid pillars, which lead it upward through scalloped arches or elegant circular struts to the architrave supporting the dome, whence it falls to the elaborate pilasters and door-jambes of the shrine, travels round walls encrusted with white Italian marble divided into bays by pilasters and relieved by niches, and comes to rest upon a variegated marble floor of geometrical design, in the middle of which beneath the dome is a superb floral or foliate inlaid centrepiece. Such is the first effect produced, and though it undoubtedly loses with more detailed inspection, it never suffers more than partial eclipse.

Plate III (Mulia Parsvanath) presents the interior of a temple dedicated to the first and twenty-third Tirthankars, constructed during the last seven years upon the site of an old wooden temple. The traditional stone pillars are employed, and it may not be amiss to draw attention here to the details of their construction. The elongated base and sub-base, square as regards their main faces, are really 20 sided polygons owing to the two re-entrant angles at each corner. The intermediate salient angle is less advanced, and by the aid of the *shikhra* ornament (a miniature spire), an easy transition is effected to an octagon, each face of which, as in the base, is shallowly panelled. The octagon

passes into a polygon of 16² flutes, divided by arrises, and terminating in leaf-shapes, of which the arris forms the main rib. The polygon develops into a cylinder, banded and divided by eight vertical bars. This is capped by a broad ornamental necking band, upon which rests a somewhat inadequate bracket capital, enriched with angle-leaves and supporting a plain abacus. Above this rises a dwarf-shaft, terminating in a massive bracket capital with plain scroll mouldings that carries the architrave. The dwarf-shafts are practically concealed towards the dome by pudding-limbed *gopis* (herdswomen beloved of Krishna) in impossible attitudes, equally defiant of gravitation and anatomy. From the lower bracket capitals spring scalloped stone arches, lightly cusped, seeming to carry the architrave, with which they are connected by stone spandrels sparsely decorated. The scalloped arches here and in plates V and VI, have not lost constructive meaning. They are sufficiently massive to appear to carry the solid stone beams above them. The effect however is somewhat ponderous, and it accentuates the weakness of the lower bracket capitals which purport to carry the superincumbent weight.

The shrine itself is ornamented with carved marble arcading, and the door jambs are of yellow marble. The carving at the bases is unfortunately obscured in the plate, as is the white carved marble work above the door. Marble carving, however, does not properly fall within the scope of this monograph. The four pilasters of the shrine wall are modelled upon the lines of the pillars described above, but are completely encased in black, white and yellow marble, sparsely moulded and betraying the merest suggestion of inlay. The walls of the temple are encrusted with slabs of Italian marble throughout, and the floor is a marble pavement with an elaborate and elegant floral centrepiece, shown in plate IV. It is unfortunately impossible to reproduce the colours, which are tastefully arranged and more subdued in effect than usual. Roses are the most prominent feature of the inlay, which may be regarded as an example of genuine Ahmedabad work, being designed by Gulab, a local *mistri*, and executed by the Chhagan already mentioned. The effect is distinctly pleasing, but the workmanship is not of the highest order, since the cement between the incrustations and the marble ground is obvious to the naked eye.

Plate V-1 shows a temple dedicated to Vegechintaman, the 23rd Tirthankar, in Kalusi Pol, similar in general aspect to that last described. The main point of difference is the absence of a dome, and the consequently different arrangement of the pillars. The style is the *nauchauki* described above. The vertical bars which divided the cylindrical portion of the shafts in plate III are here exchanged for triple beadings. Another variety appears in plate V-2 where the divisions are effected by chains. (It is worthy of remark that wherever the chain is found the links are represented alternately in front view and in profile.) The same plate shows the artificial flowers below the bracket capital developed into the lotus. The pilaster is from a small unfinished temple in course of construction in the compound of Mr. Jeysangbhai Hathising's private residence.

Plate VI gives a fair idea of the interior of Sambhunath's temple in Kheterpal Pol, begun eight years ago, and as the plate shows, still unfinished as regards the ornamentation of wall and floor. It is said to be an imitation of Malinath's Temple at Bhoyni in the Viramgam Taluka. It has the same heavy stone scalloped arches that distinguish the examples already illustrated, but the lower bracket capitals, also of stone, cannot be charged with lack of functional significance. They revert to the typical massiveness of the ancient style and are almost devoid of decoration, which is practically confined to the marble encrusted pillars and pilasters. The contrast thus formed between the crudity of the superstructure and the delicacy of the inlays that enrich the pillars and pilasters is abrupt in the extreme. The concentration of ornament below the level of the capitals no doubt serves to withdraw attention from the oppressive weight above, but the result is obtained by a breach in artistic continuity for which nothing can compensate. The pillars themselves constitute an apt illustration of the reaction of decoration upon structure. It will be observed that both pillars and pilasters retain the form of elongated base and sub-base already described, but whereas the pilasters continue to reproduce in encrusted marble the successive stages of the ancient stone model, the pillars show their emancipation from tradition by continuing the square form, supported above the base by engaged marble columns at the angles, throughout the greater portion of their length. The intention is to

present at the level of the eye a broad flat surface for inlay. The spectacular centre of the temple is midway between the pillars of the dome, and the angle to the eye is too acute to permit elaborate inlays on the bases of these pillars to be viewed with advantage. Inlays on the bases are therefore limited to slight floral or foliate motives upon simple geometrical lines, and the more elaborate work is reserved for the succeeding stage upon which the eye naturally rests.

In the treatment of the wall pilasters, the bases of which bear the richest inlay, the same restriction did not exist, because the greater distance of the inlaid bases from the eye renders the angle of vision less acute, and enables their effect to be appreciated without effort.

Enlarged reproductions of the pillar and pilaster inlays are given in plate VII-1, 2, 3. Mainly floral but including representations of elephants, birds, and butterflies, they are executed in the usual coloured marbles, cornelian, glass and mother of pearl. There are some good flowers in the latter material, and it is very generally used in the main ribs of leaves. The work may fairly be classed as native to Ahmedabad, since it was designed by Gulab, the local artist, and carried out under the joint supervision of himself and of Ravi Karan, a native of Visnagar in Gaekwari territory resident in Ahmedabad.

Plates VIII and IX show respectively the exterior and interior of a temple in Vagan Pol dedicated to Parsvanath, the twenty-third Tirthankar. The façades in plate VIII-1 and 2 afford a better suggestion of the internal decoration than usual, the same light circular strut-arches with floral cusps being characteristic of both. The columns have already been noticed. The lower bracket capitals have lost the large angle leaves between the brackets, and in their place appear floral sprays terminating in an elementary volute shape. The *gopis* which conceal the dwarf-shafts between the upper and lower capitals are in somewhat better proportion, but in even worse taste and more irritating to the eye than in previous examples. The temple is of greater extent than most, and the interior (plate IX) is not unpleasing in general effect. The 36 pillars and pilasters, with the light scalloped arch-struts which unite them and constitute the distinguishing feature of the temple as compared

with those previously described, lend it an appearance of richness and variety which saves the style from the common reproach of heaviness. Feebleness, however, is more apparent than before. The arch-struts decorated with cusps of lotus flowers with the lower row of petals turned back, and springing from plain foliate clusters disproportionate to the attenuated bracket-capitals on which they rest, have degenerated into mere ornamental adjuncts, wholly unfitted to perform the functions of the constructive members whose place they have usurped. Owing to the breadth of the entrance aisle, those on the right of the plate present a flattened and most ungraceful appearance. The *paris* (dancing girls of Indra) on the interior brackets of the dome-pillars are as unpleasing as the *gopis* of the façade. The wall and floor are in the usual variety of marbles, mostly Italian. The temple, which replaces an older wooden construction, has been erected during the last two years under the supervision of Chhagan and Gulab, who must be held jointly responsible for the entire scheme of decoration. The inlays are of ancient date and therefore excluded from notice here.

Plates X, XI and XII illustrate the interior decoration of Sambhunath's temple in Kalusi Pol, which has been reconstructed during the last ten years. The pillars are of stone except in the shrine-aisle where they are encrusted with marble, and they follow the traditional square, octagonal and 16-sided model already described. From the lower bracket-capitals spring scalloped strut-arches, of greater mass than those seen in the last example and with the interspaces of the cusps filled with pierced foliage tracery. The plain foliate clusters are here broken up into small leaves interspersed with flowers and buds, giving an appearance of lightness which somewhat reduces the disproportion between the cluster from which the strut springs and its support. The tracery between the cusps helps to increase the apparent strength of the arch-struts and renders their constructive impropriety less noticeable. Plate XI-1 shows the shrine pillars on a larger scale, and XI-2 gives some idea of the elaborate inlay of the bases. In plate XI-1 it should be mentioned, the capitals, upper dwarf-shafts, and arch-struts, are all in stone, the superposition of which upon marble pillars produces a somewhat peculiar effect. The carved figures at the bases of the different door-jambes are in marble.


Immediately in front of the shrine door is seen the *Sathia*, (the mystic *Swastica*)  inlaid in coloured upon white marble. The simple cross is developed into a fret, which is frequently far more elaborate than the present specimen. The main panel in plate XI-2 represents a single stem ascending from a vase and developing into a profuse growth of leaves, buds, flowers and fruits at which pigeons and parrots, perched on the branches, are pecking. The flowers immediately above the panel are in mother of pearl. The inlay is said to be the work of Agra men carried out under the direction of the local *mistri* Chhagan.

Plate XII-1 exhibits the quaint and elaborate inlay of the pilasters of the niches on the North and South walls. The design is a serpentine plant motive springing from a vase and terminating at the top of the pilaster in a single flower. The undulations are filled and partly concealed by figures of lions, cows, monkeys, cats, snakes and human beings. A lion in talc presents a peculiar aspect. The shading and drawing are executed on the back of the translucent material and show through, the eye alone being added on the external surface, with the curious result that its relative position changes with the movements of the spectator. The effect, as might be supposed, is abominable, and the experiment has not been repeated. The colours are somewhat crude, but the workmanship generally is good, and the design, which is attributed with some show of probability to a wall-painter, appears to have the merit of originality. No. 2 in the same plate gives the magnificent floral and foliate inlay in the pavement beneath the dome. It is said to have been executed from a design by one Walji, a stranger to Ahmedabad, by Agra workmen under the supervision of Chhagan.

Plate XIII has already been briefly noticed for the polygonal pillars of its external porch. The plan presents certain constructive difficulties. The breadth of the central opening requires the employment of the angular strut in place of the usual arch-strut. The side openings cannot be similarly filled, since the angle formed by the struts would be too acute. The difficulty could be surmounted by stilted arch-struts, but juxta-position of the angular and circular strut seems always to be avoided, and the combination would hardly be harmonious. The

similar plan of the Kakabalia temple (plate XVII-1) has led to the alternative treatment of leaving the large centre opening blank, and filling the small side openings with stilted scalloped-arches. The temple (plate XIII) is situated in Samla Pol, and is dedicated to the twenty-fourth Tirthankar, Mahavir. It was constructed five or six years ago under unusual circumstances. The local committee entrusted with the funds either could not agree with a *mistri* to direct the work or could not afford to employ one, so that the workmen were left without skilled supervision. Under these conditions it is not surprising to find that most of the features are borrowed from other temples, but it is interesting to notice that the execution of detail does not appear to have suffered by the relegation of the workmen to their own resources.

Plates XIV and XIV-A illustrate Ajitnath's temple in Kalusi Pol, constructed some thirty years ago under the supervision of Chhagan at about the time which he was engaged on the additions to the external porch of Hathising's temple shown in plate I, in connection with which the exterior has already been noticed. The columns in plate XIV-A are of the type usually preferred for external decoration. The reason given is that the foliate base and cup, the tapering fluted shaft, and the bell capital require greater skill, labour and cost to produce than the square-based pattern passing into 8 and 16 sides, and that their external position is governed by motives of ostentation. In any case, the tendency to banish the circular column, obviously the better adapted to interiors, to the outer porch, must be regarded in the light of a reversal of the natural order of things. The bracket-capital surmounts the bell by an awkward transition, and it is rendered hideous by the painted faces that peer from the foliage ornament. The dwarf-column rising between the scalloped arches to the architrave is heavily cinctured and enriched with artificial flowers and chain ornament. The walls, which are panelled in yellow and black country marble, are divided into bays by sunk columns on the model of those supporting the dome, but less ornate. There is a plain *sathia* (cross) and other simple geometrical inlay immediately in front of the shrine door. The centre-piece beneath the dome is shown in plate XIV-A No. 2. It is a rich foliate inlay in black, yellow and red country marble on a white ground. The leaves are the *jasund* with the points of the large lobes in

the angles reversed. Chhagan claims both design and execution.

Plate XV bears a very distinctive stamp of modernity. The building, situated in Chang Pol, is in process of construction by Chhagan. The ground floor is used as a school; the first floor is a temple. The channelled and cinctured columns, the elementary volutes of the capitals, the clustered shafts supporting the arch-struts, the twisted shafts of the windows, and the balusters of balcony and of parapet combine to produce an effect in which the Western element preponderates over the Eastern. The mixture is a strange one but not without interest, since it possibly contains the germ of the future street architecture of Ahmedabad.

Plates XVI and XVII-1 are from the temple of Suvidhinath, the ninth Tirthankar, in Kakabalia Pol, constructed within the last eight years. The second of the two showing the façade has been sufficiently noticed on page 10 above, and also in connection with plate XIII. It is interesting to compare plate XVI with the niche in plate XII-1 where the bulk of the inlaid work is confined to the flat surface of the pilasters. In the present case it not only covers the flat surfaces, but invades the carved marble ornament in the round and in relief, the bases and bell-capitals of the columns, the elephants on which they rest, the cusps of the scalloped arch, and the drapery and faces of the figures. It seems to be on the way to overstep the limits of the flat in decoration, its legitimate sphere, and to assume the functions of painting as applied to sculpture and carving in ancient Hindu architecture. The effect is rich and the design, said to be of Udaipur origin, has been carefully executed in the usual materials by Agra workmen under the direction of the indispensable Chhagan.

Plate XVII-2 gives a recent example of the pierced stone tracery (*jali* work) that formed so prominent a feature in the decoration of the ancient Mahomedan architecture of Ahmedabad. It is a memorial window in the Irish Presbyterian Mission Church erected in 1900-1901. The design, by the Rev. J. S. Stevenson, is a tasteful combination of traditional Mahomedan panels with Western motives conceived in the same style, and was executed by Mahomedan workmen of Ahmedabad.

In plate XVIII is seen work in preparation for a new temple in Patasa Pol. Gulab, the *mistri* who appears in the plate, is responsible for both design and execution. The carving displayed is in marble (and strictly speaking outside the scope of this monograph), but as the scheme of decoration is to be carried out in both stone and marble, it may indicate the direction in which carved stone ornament is progressing. The execution is of a higher order than usual, and the designs include varieties of the lotus, vine and grape, poppy, ivy, and natural as well as artificial leaves, berries and flowers. But it is somewhat startling to see the curvilinear tower, the *shikhra* of the Hindus, perched upon Gothic trefoiled arches, and to find (on the lowest capital to the right) the acanthus, with its lobes divided by the distinctive eye and characteristically overlapping, carved side by side with the lotus of Eastern ornament.

If this analysis of the plates has served to convey a general impression of stone carving and inlaying as at present practised in Ahmedabad, it may not be out of place to enquire what tendencies are revealed by the investigation, what principles emerge from the mass of disconnected if not conflicting detail. Great changes have disclosed themselves, and it is natural to seek their origin in the influences of Mahomedan and Western art. But when it is attempted to trace the operation of these forces in detail, it is astonishing how little can be safely attributed to them. There are isolated cases in which European architecture has left its mark, *e. g.*, in the style of building seen in plate XV and in some of the carved ornament of plate XVII-2, and plate XVIII, but these are the exceptions, not the rule. Musalman influence has bitten deeper, but it is negative rather than positive in results. It might have been expected that the pointed arch would have forced its way, but there is not a single example in any of the temples; nor do they exhibit any trace of the beautiful pierced stone tracery known as *jali* work, while even the Mahomedan genius for geometrical carving has failed to stimulate imitation. In the deterioration of sculpture however that influence is everywhere apparent. It would seem as though the capacities of Hindu art in this direction had been atrophied by the long period of enforced neglect prescribed by the Musalman prohibition of the organic. The figures which diversify the modern temples have

not one redeeming feature. They are shapeless, ill proportioned, and hideously contorted, and they lean forward from the background towards the spectator in an eternally suspended act of falling.

That the close contact of Mahomedan and Western influences should have produced so little impression would seem to argue great power of resistance in Jain art, but it is the resistance of inertia not of active vigour, for feebleness is apparent in every direction, in construction, in decorative design and execution. It is betrayed in weak brackets and attenuated struts, in shallow carving, superficial panelling and in the tendency to substitute play of line for play of mass, flat ornament for round, colour for light and shade. It makes itself felt too in lack of unity of design and in frequent lapse from the symbolism that formerly was universal. The massive bracket-capitals have dwindled to constructive impotence, and their diminished surface cramps the ornament that should enrich them. The popular and effeminate circular struts have usurped the place of scalloped arches, but not their function; no longer structural features affording scope for ornamentation, they have themselves become ornaments, and have lost at once all *raison d'être* and all propriety. There is little under-cutting in the carving and though it retains sharpness of outline and finish, it lacks depth and is deprived of the effect that can only be gained by bold alternations of light and shadow. Neglect of these potent agencies is evidenced by the fondness for plain surface panelling, and the tendency is reinforced by the growing preference for inlay, not only upon the flat surfaces to which it is appropriate but even upon shafts, capitals and figures. The manipulation of mass and the effective handling of light and shade seem to have passed away almost as completely as the faculty of sculpture. This may in some degree be due to the slender proportions of many of the modern temples, but it seems rather to connote the artist's loss of grip upon the instruments at his command, and a narrower conception of the possibilities of his art. And it is a form of narrowness that conduces neither to unity of design nor to the effective preservation of tradition. Symbolism has ever been the key note of Indian art, and in the religious arts it has been all pervasive. Yet it is impossible to trace any symbolic meaning in much of the modern inlaid work, the motive of which is purely æsthetic, and the recur-

rence of non-symbolic ornament such as the acanthus in temple carving is significant. In the distribution of ornament also there is a noticeable break with tradition. The imperative need of covering every inch of surface with decorative work, so characteristic of earlier architecture, is no longer manifested. The tendency on the contrary is to concentrate ornamentation, and to tolerate extensive bare spaces in the dome, the architrave, and the bays of the walls. The discrepancy between exterior and interior which has been noticed exemplifies the looseness of design and lack of unifying principle that reduce decoration, where not purely traditional, to little more than a congeries of disconnected elements.

Such are the main characteristics of Ahmedabad temple-decoration as they appear to a layman, and it cannot be denied that they diverge almost to the degree of paradox. What is the secret of an art that can oppose an impenetrable front to the most powerful and insidious foreign influences, but yet has lost so much of the spirit that informed it, so much even of ordinary power of organic cohesion, that it suffers a puny æstheticism not only to break down the walls of constructive propriety but to invade the very sanctuary of symbolism? In religion and its change of attitude towards temple-building is to be found the solution of the paradox. For reasons explained in the first section of this monograph, religion is no longer identified with temple-building. By dissociation from the state and loss of the superabundant material resources which the union conferred, it has been compelled to abandon its normal channel of lithic realisation. The new situation thus created has modified the whole conception of a temple: it is no longer a prayer in stone, an expression of the highest ideals and noblest aspirations of religion, a fabric of which no part must be left uncovered with a garment of beauty and mysticism, the finest and most perfect that infinite pains can fashion. It has become little more than a hall for worship, the necessary adjunct of a shrine, calling for some measure of adornment lest the congregation be shamed, but no longer claiming the highest work of brain and hand. Such being the present relation of religion to art, it is easy to understand that while Jainism, still in the plenitude of its vigour, would tolerate no innovation that could be associated with the rival creeds of Mahomedanism and Christianity,

it should nevertheless have failed to resist the encroachments of an æstheticism and the insidious advance of an effeminacy in which it could detect no hostile influence. Religion stands by, a jealous guardian forward to defend art against any movement to which a suspicion of hostile faith attaches, but content to contemplate with equanimity the operation of other forces equally destructive though of different origin. The union of religion and art has been dissolved, and its place is occupied by an alliance that guarantees the latter against assault from alien creeds, but leaves it exposed to attack from other quarters, and deprived of the stimulus of inspiration and the virile spirit necessary to combat the forces of natural decay.

Part III.

I.—CRAFTSMEN.

Ahmedabad City finds employment at the present time for some 200 stone-carvers and inlayers, and there are perhaps a hundred more working in other large towns of the District. In addition, a considerable number of masons and stone-cutters are capable of elementary stone-carving, examples of which may be seen in almost every village. There is some overlapping in the two professions, most inlayers being also stone-carvers, though the converse does not hold good. Comparatively few of the workmen can boast pure Ahmedabad extraction, but a large proportion must be considered to have become naturalised, since they admit a period of family residence extending in some cases over three generations. In origin they are mostly Sumpara Brahmins from Vadnagar and Visnagar in Baroda, Gaud Brahmins from Jeypur, Upretia Brahmins from Agra, and Musalmans from Palanpur.

Much of the cutting and polishing and the preparation of material for inlay is done by women and boys.

The hours of work are usually from 7 a. m. to 12 noon, and from 2 p. m. to 5 p. m., making an eight-hours day, which is light in comparison with other professions; and the daily wage varies for second class men from annas 8 to 12, and for first class artists from annas 12 to one rupee. In comparison with these rates the remuneration of the *mistri* appears strangely inadequate. He is architect, builder, designer of all decoration and sculpture with complete control over every branch of operations and the selection of all employées,

whose work he must supervise in the minutest detail, and for the performance of these varied functions he draws as a rule no more than two rupees a day! That a man who has received a professional training in the Bombay School of Art, an advantage claimed by one of the local *mistris*, should be content with such a wage is surely a matter for surprise. Doubtless there is some indirect profit, but it cannot be considerable.

The high character of work of which *mistris* and men are capable, when liberal treatment provides a fair opportunity, is shown by the front of the external porch of Hathising's temple in plate I. Much of the shallow and hurried work in modern temples is undoubtedly due to the money limit imposed, which it is the fashion to attribute to poverty. Lavish expenditure in other directions shows that so far from prosperity decreasing, the times have grown better; but taste has grown worse and the best without stint is no longer the rule of temple-building. So, since the craftsman must live, the work is cut to the wage.

II.—MATERIALS.

(a) STONE-CARVING.

The stone in common use is imported from the sandstone quarries of Ahmednagar about 50 miles to the north-east of Ahmedabad, and from Dhrangadra, some 75 miles to the west. The Ahmednagar stone is a superior calciferous variety, and it realises a higher price in the Ahmedabad market than that of Dhrangadra, despite the fact that the latter has to meet far heavier charges for transit, customs and royalty.

The royalty on Dhrangadra stone is two annas per cubic foot, that on Ahmednagar stone one anna and nine pies; and the freight and custom charges on two hundred Bengali maunds (one truck load) are Rs. 39-5-0 and Rs. 5-1-0 respectively on the one, as compared with Rs. 20-8-0 and *nil* for the other.

(b) INLAYING.

Among the materials used in inlaying, marble takes a prominent place. In addition to country marble, white, black and blue Italian marble is freely employed. The extent to which the Italian product is imported into Bombay is shown in an appendix, but it must be remembered that the great bulk of the amount (some 25,000 cwt. a year) is not intended for inlaying, but for pavements and the incrustation

of walls and other flat surfaces with large polished slabs. It may appear beyond the scope of this monograph to enquire into the reasons for the importation of foreign marble into a country so well provided with material of its own, but the matter is of sufficient importance to justify brief notice. The main reason for the preference for Italian marble appears to be that it is put upon the market in the shape generally required, *viz.*, large thin slabs of smooth surface. Marble from the Makran, Jesalmir and other quarries within reach of Ahmedabad can only be obtained in block. Railway freightage and quarry royalties are minor factors, as is shown by a comparison of the prices of block marble native and Italian in Ahmedabad. The cost per cubic foot of white Makran marble is Rs. 6-0-0; of yellow Jesalmir Rs. 9-8-0; of Italian first quality Rs. 35, 2nd quality Rs. 18, 3rd quality Rs. 9. The *mistris* of Ahmedabad declare that to make Italian machine-sawn slabs ready for use they require nothing but light polishing at the rate of three annas per rupee of cost price, whereas native marble, which has to be hand-sawn out of block, prepared and polished, absorbs two rupees in labour for each rupee of cost price. If this estimate be correct, the cost will be ten times greater in the one case than in the other, and the reason is obvious why country marble cannot compete with foreign, except where it is required in block. The remedy would appear to lie in the provision of the requisite machinery at the Indian quarries, if the market is strong enough to justify the venture.

The background in which the design is laid is usually white and generally of marble, native or Italian, but the white sandstone above described also carries inlaid work, as is shown in plate XIX-1 and 4, where the pillars and pilasters are of Dhrangadra sandstone. Plate IV shows an elaborate inlay on a dark marble background.

White, black, yellow and blue material for inlaying is commonly obtained in marble of natural complexion by the simple process of cutting and polishing, but shades of red are produced by subjecting yellow native marble to an artificial process of heating, combined with the application of lemon juice and sugar-candy. The depth of shade is regulated by the time of exposure.

The other materials most employed are cornelian, blue, green and yellow glass, mother of pearl, conch-shell, lapis lazuli, cobalt, slates, glazed ware, and talc.

The only trace of the use of pearls in inlay, for which Ahmedabad was once famous, was found in the temple of Neminath Maharaj in Pada Pol, where it was stated that a *sathia* was to be inlaid in pearls on some red ground, and placed before the shrine at the time of worship.

III.—METHODS.

(a) STONE-CARVING.

The methods employed are of the simplest, but there appears to be some difference between those followed in Bombay and in Ahmedabad. In Bombay, the Principal of the Sir Jamsetji Jijibhoy School of Art writes "As far as I have had the opportunity of observing, they (the workers in stone) seem to have very little knowledge of drawing or modelling and cannot be relied upon to carve direct from a drawing, the best work always being done from a model. The whole of the detail upon the Victoria Terminus and the majority of F. W. Steevens' buildings was first modelled in the School of Art and the carving done from those models, which were hoisted on the scaffolding and placed beside the stone to be carved. Like other Asiatics they can copy with considerable exactitude, but when work is required that is different from the few traditional patterns they know, they are helpless unless a modelled design is before them to copy." In one very important respect this is identical with Ahmedabad practice. The mechanical contrivance called a pointing machine is unknown, and the workmen are thrown largely upon their own resources, with the result that whatever technical skill or artistic faculty they may possess obtains every opportunity of exercise and development. It would appear, however, from the passage quoted that in Bombay the carving is carried out after the stone has been placed in position, a course which appears to have been almost universally followed in ancient Indian architecture, but one which has been abandoned in modern Ahmedabad. Upon the advantage in the calculation of production of effect that this secures it is needless to insist, and there can be little doubt that Ahmedabad work has suffered by the departure from tradition. A further call is made upon the abilities of the Ahmedabad workmen by the absence of a model. The *mistris* state that they never find that anything more than a drawing is needed. Even Gulab, the *mistri* trained in Bombay, has given up the practice of providing models

for his carvers. The design is drawn on paper and is then transferred in pencil to the stone, and if the subject is a figure or any motive that departs from the conventional, the workman has a finished copy in pencil before him from which he takes the necessary measurements with the aid of a pair of compasses. These are methods which imply a high degree of skill and artistic feeling on the part of the workmen, and a power of interpretation not far removed from originality.

(b) INLAYING.

Plate XIX shows inlaying in process in a room adjoining a temple in course of reconstruction in Pada Pol in Ahmedabad. The design, after being perfected on paper, is transferred to the stone or marble ground in pencil, and cut out with a fine chisel, and the marble, glass or other material, after being cut to size and polished, is inserted with cement in the socket thus formed. The cement used is composed of resin, wax and whitelead. After the material has been roughly cut, shapes of tin-plate (one of which, a leaf-shape, is shown on plate XX in the right hand corner, above the templet) are affixed to the outer face for the workman's guidance in grinding the edges with the necessary precision. The process is shown in plate XIX-2, in which a boy is represented working a small grindstone (*saran*) made of corundum (*kurand*) with his right hand by means of a stick and string (*dandosi* or *kubani*), while with his left he applies the edge of the material for insertion to the revolving disc. The edge is either cut square, or bevelled according to the idiosyncrasy of the artist. No. 3 in plate XIX shows a boy cutting glass for inlay with a *kaman*, a bow of which the chord is formed of two parallel wires, and powdered corundum and water. The bow is weighted at the end furthest from the hand with a half-brick, and the double wires enable two surfaces to be cut at the same time. Before insertion the incrustations are squared and polished on the external surface by rubbing on sheet iron or on a marble slab with sand and water, a task usually entrusted to women. After insertion, all inequalities in inlay, groundwork or joints are removed by the vigorous application of smoothed *kubdi* (soft white sandstone) and water, and a final polish is imparted by friction with cloth in which finely powdered soft white pottery is tightly wrapped.

IV.—TOOLS.

Simple methods imply simple tools, and it will be seen from plate XX that the latter are neither numerous nor complicated.

No. 1 is a two-handed saw for stone and marble cutting, with the knife considerably worn. A groove is chiselled in the stone to guide the blade, and coarse sand from the river bed and water are applied.*

No. 2. Set-square and measure.

No. 3. Compasses.

No. 4. Rasp.

No. 5. Circular file.

No. 6. Broad square-edged chisel for chipping and smoothing.

No. 7. Pointed chisel of four angles, for soft stone work.

No. 8. Round pointed chisel for hard stone and marble work.

No. 9. Broad square-edged chisel for carving.

No. 10. Small angle-edged chisel.

No. 11. Drill.

No. 12. Iron-headed mallet.

No. 13. Templet.

No. 14. Leaf-shape used in inlaying.

It should be noticed that the chisels are all of steel and the mallet iron-headed, a clear indication that the tools have been designed for work in hard stone.

The smaller edged chisels are of no fixed shape; the workman grinds the edge to any angle that suits the work in hand.

The tools used in inlaying are identical in form with those of the stone carver, but lighter and of finer mould, in conformity with the greater delicacy of the work for which they are designed. The leaf-shape, No. 14, is of course peculiar to inlaying, as are the grind-stone and wired-bow shown in Nos. 2 and 3 of plate XIX, in connection with which their use has been explained.

* Why coarse sand should be used in preference to fine, it is difficult to understand, for as is observed in the *De re aedificatoria* of Leon Battista Alberti, "the sharp sand found in any sort of torrent is good, but the larger it is the wider it cuts and the more it eats into the stone; whereas the softer it goes through, the smoother it leaves the surface, and the more easily to be polished."

APPENDIX.

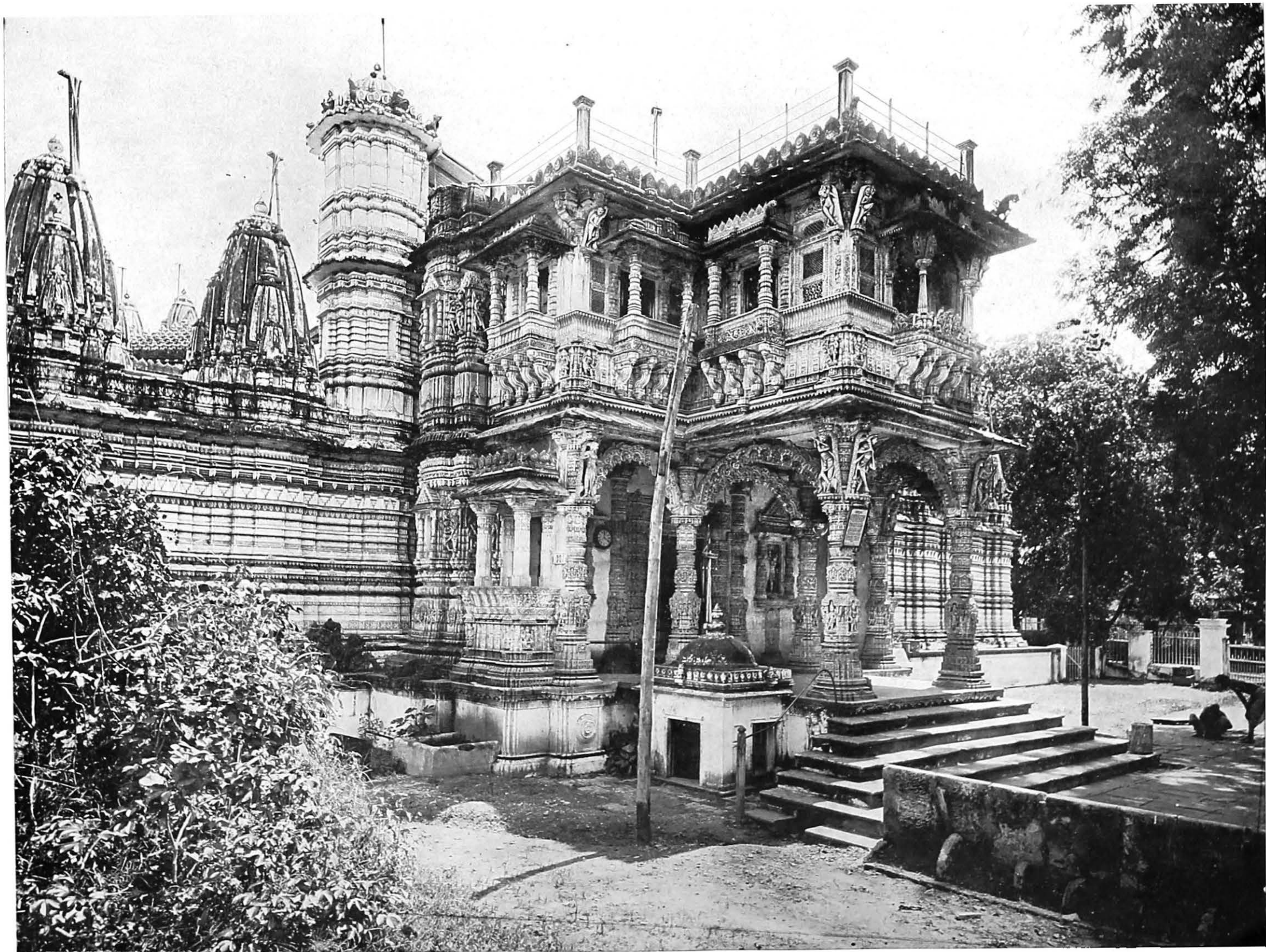
Statement showing the quantity of stone and marble imported into Bombay during the past three years from 1902-03 to 1904-05 from Foreign Countries and Indian Coast Ports.

Names of Countries or Ports.	1902-03.	1903-04.	1904-05.
	Cwts.	Cwts.	Cwts.
Foreign Countries—			
United Kingdom	1,037	10	66
Austria Hungary	6	.....	.....
Belgium	98	210	640
Germany	197	.....	.....
Italy	20,051	26,522	25,703
Other East African Ports	300	150	881
Aden ... ..	.....	3	.....
Arabia—Muskat	88,856	79,216	31,913
Mekran and Sonmiani	112	.....	....
Straits Settlements ... ..	.....	7	.....
New South Wales ... ..	.....	.....	80
Total ...	110,657	106,118	59,283
Indian Coast Ports—			
Madras—Madras	58	45	54
„ Other Ports	161	114	159
Sind—Karachi ... ..	.....	.....	.....
British Ports (within the Presidency) ...	7,750	10,148	17,635
Kathiawar	338,169	289,109	370,732
Total ...	346,138	299,416	388,580

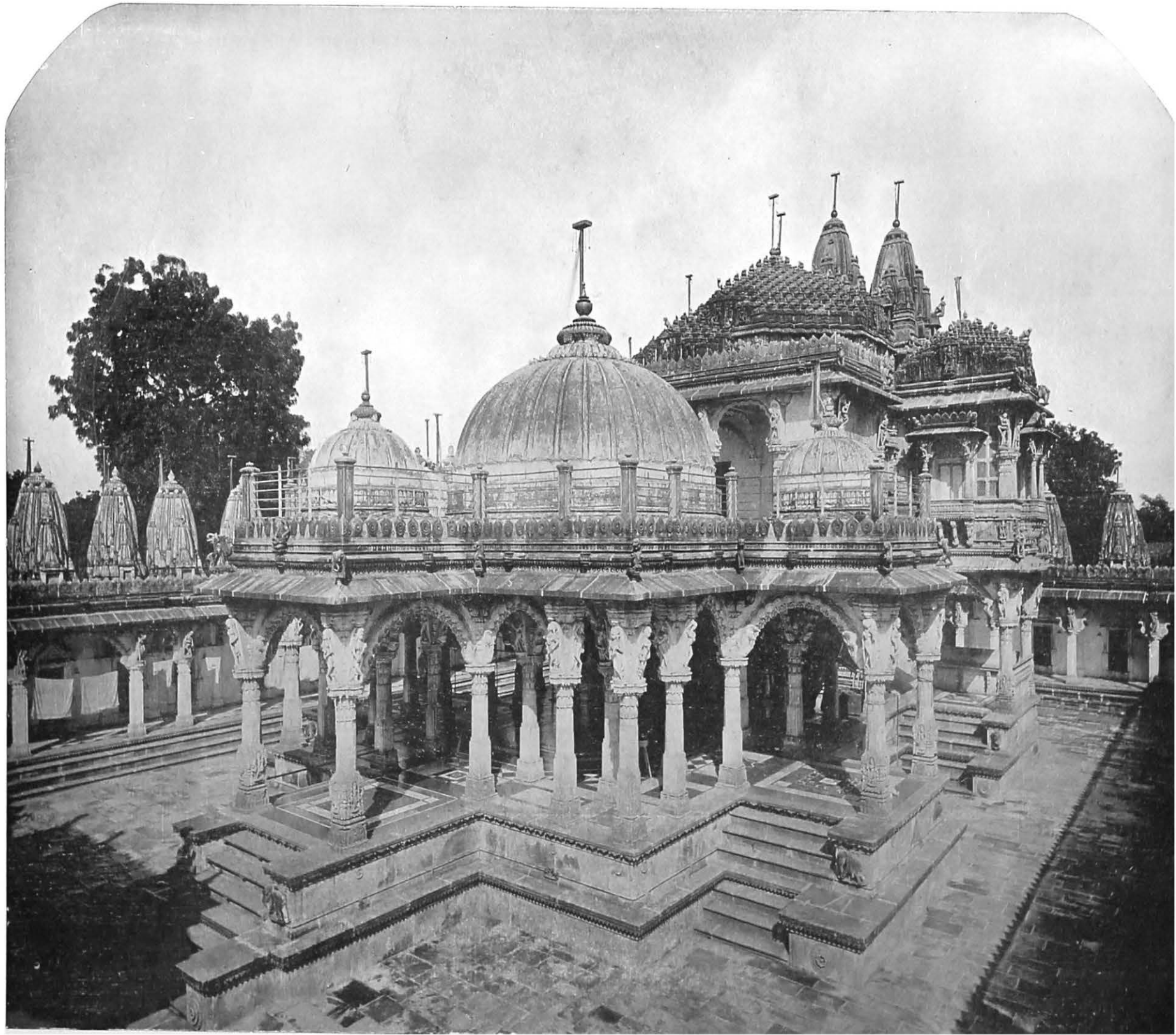
Reporter General's Office,
Bombay, 8th June 1905.

(Signed) M. J. HYDARI,
For Superintendent,
Reporter General's Office.

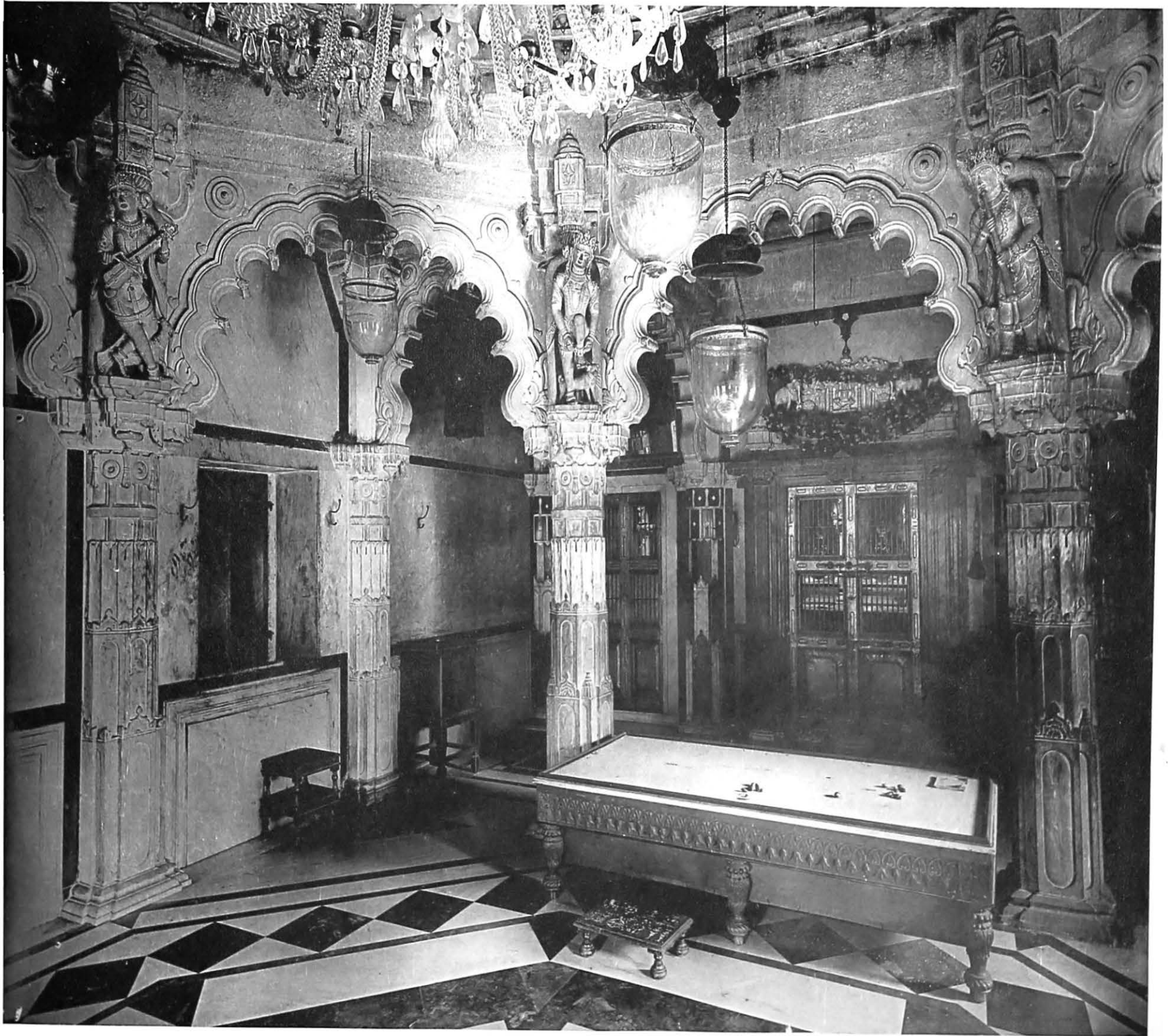
Building stone and marble are not separately tabulated at the Customs, but generally speaking, imports from Europe represent marble, from Arabia (Muskat) chunam stones, from Kathiawar ordinary building stone, and from British Indian Ports rough stone.



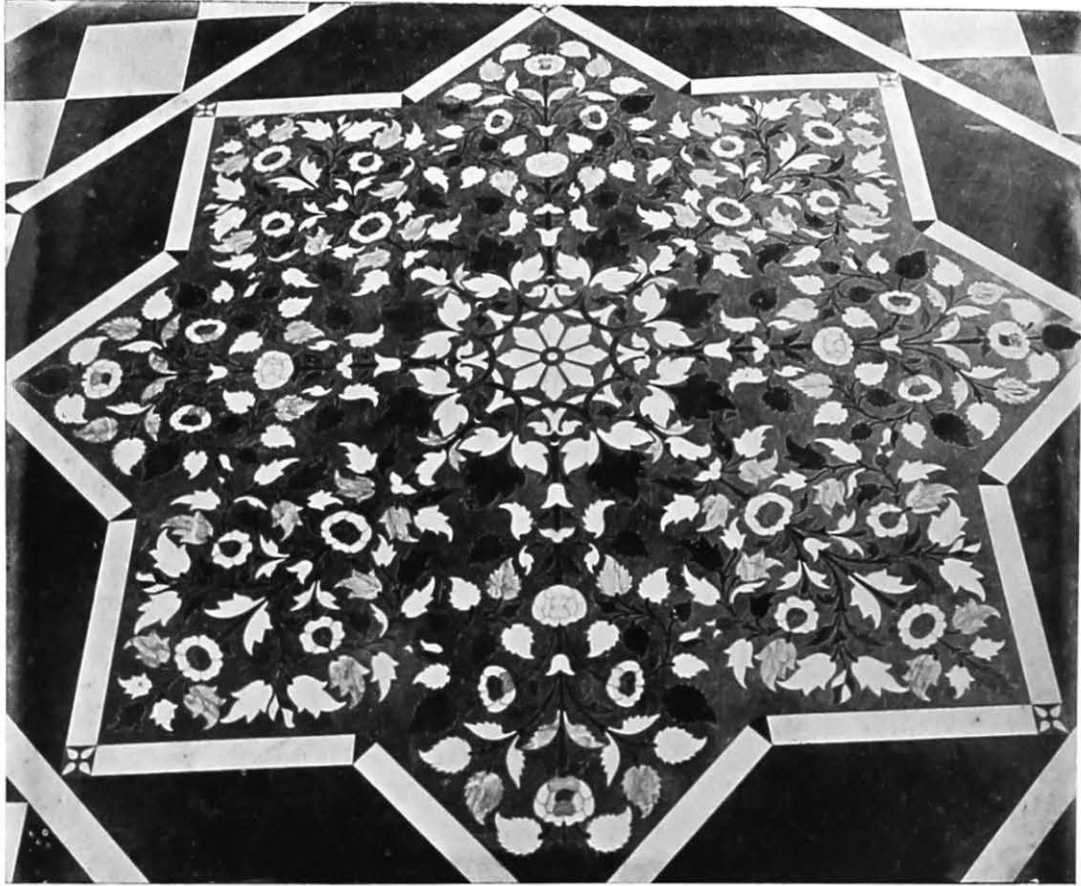
External porch of Dharmanath's Temple, commonly known as Hathising's Temple, Ahmedabad.



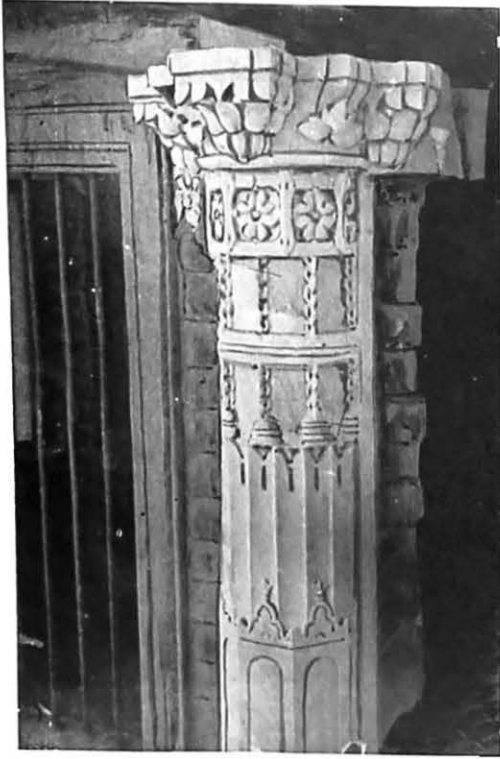
Interior of Dharmanath's Temple, Ahmedabad. Known as Nathising's Temple.



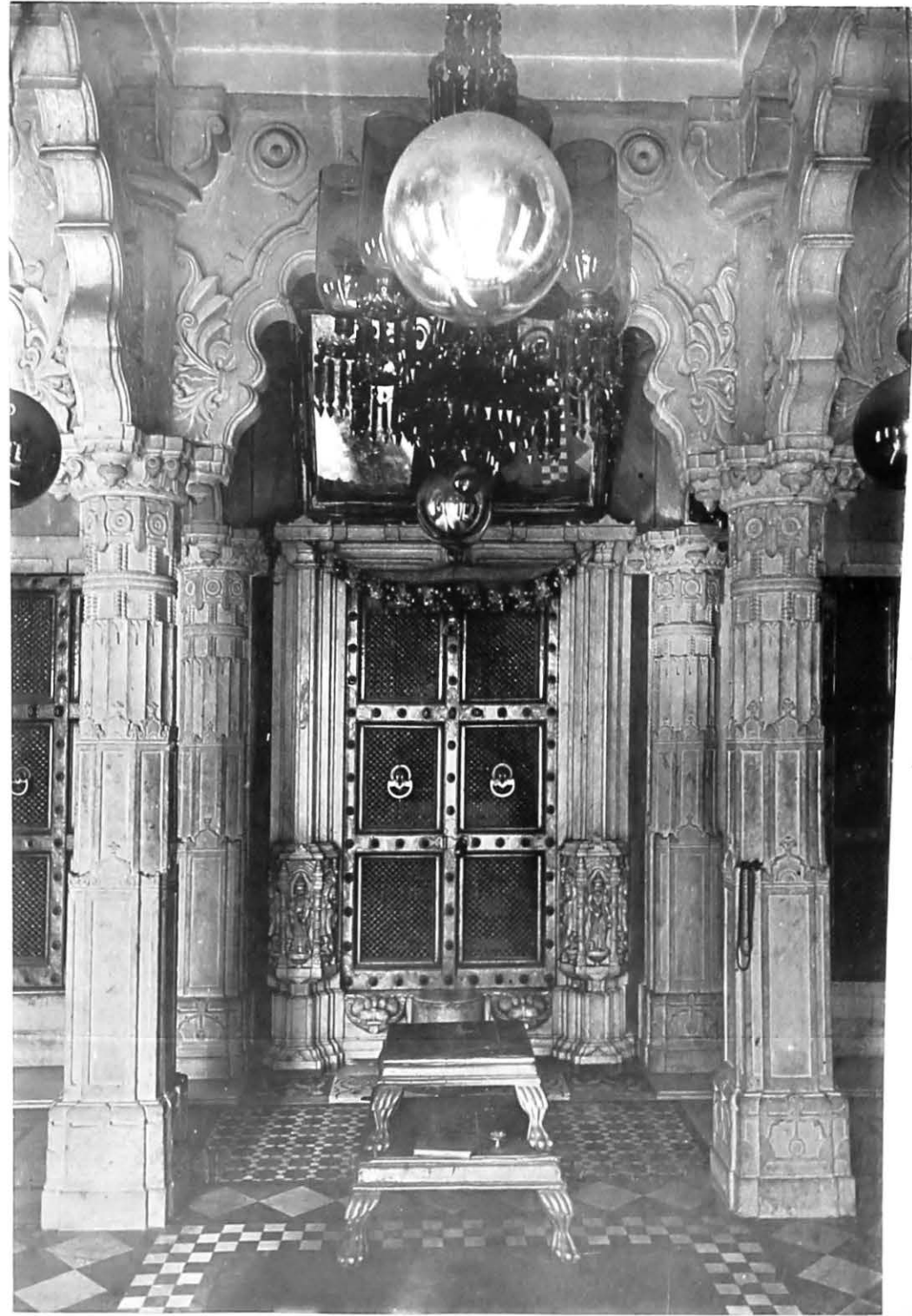
Interior of Temple, in Mulia Parsvanath's Khadki, Ahmedabad.



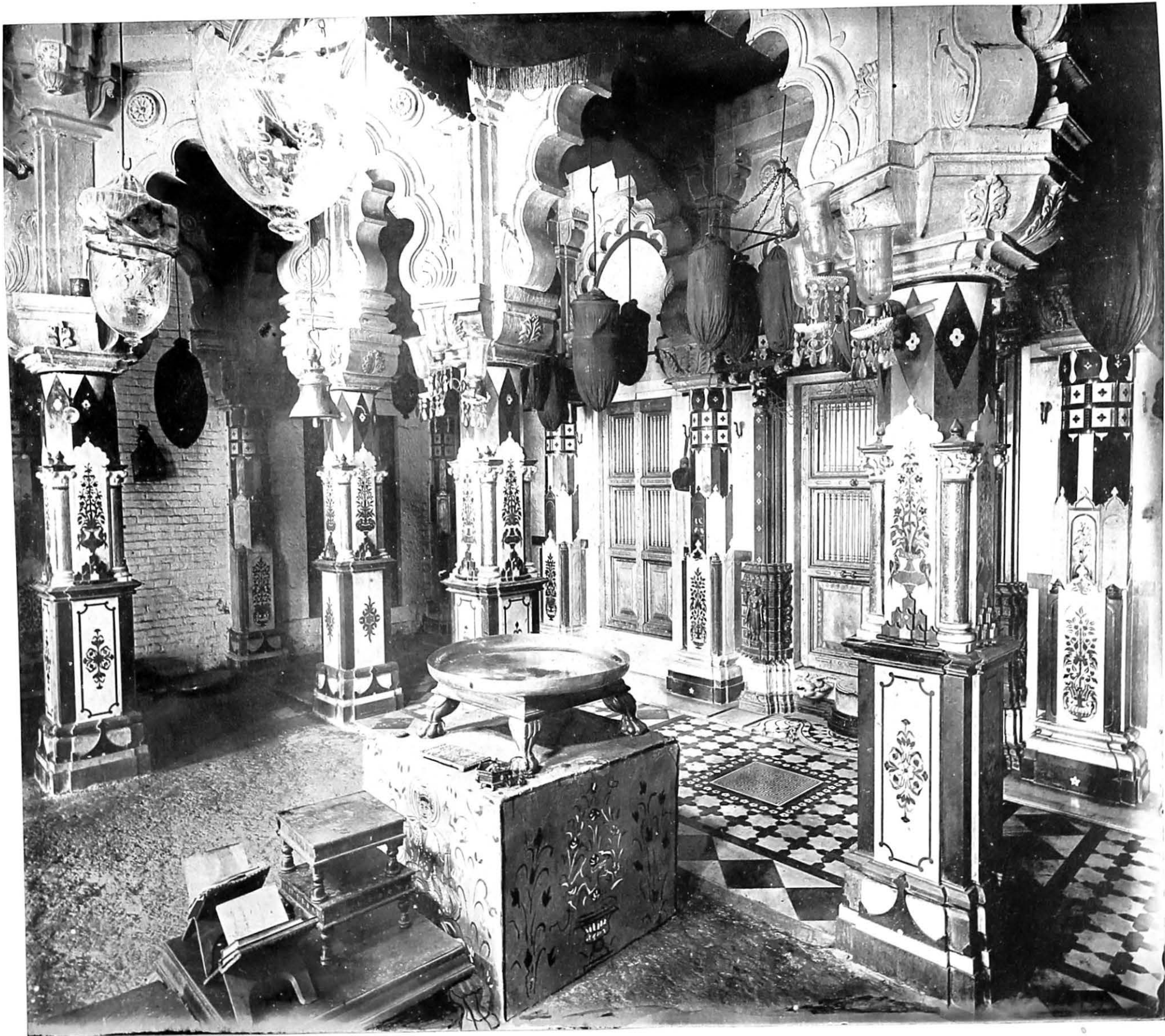
Central inlay of Temple shown in Plate III.



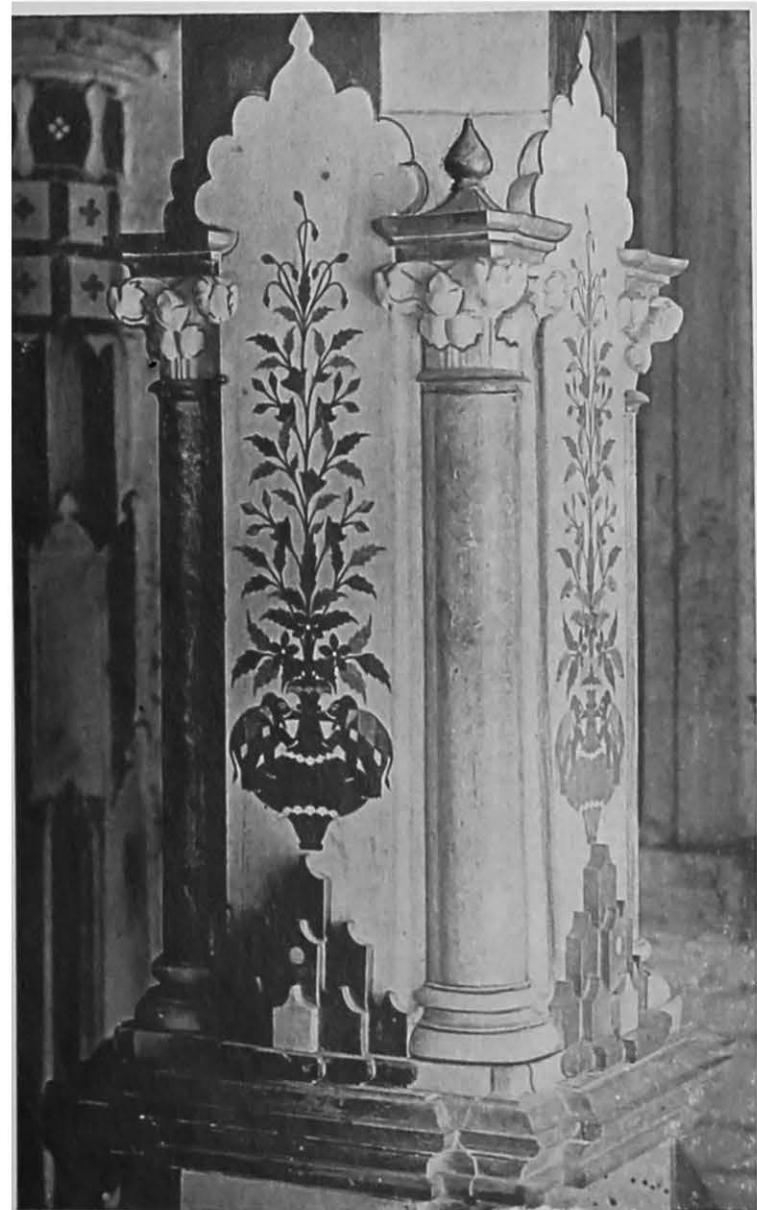
*From new temple in compound of
Mr. Jeysangthai, Ahmedabad.*



Interior of Vegechintaman's Temple, Kalusi Pol, Ahmedabad.



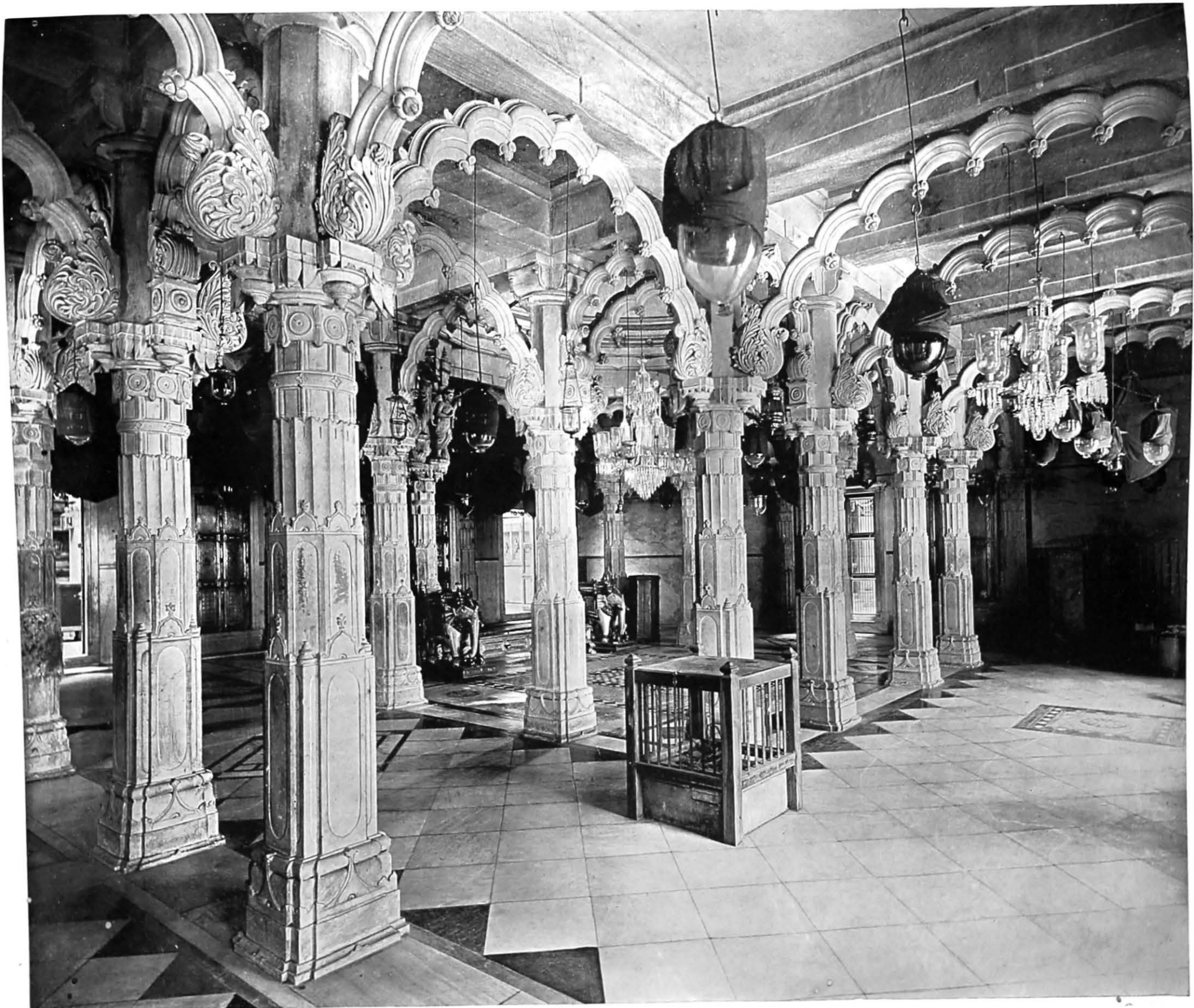
Sambhunath's Temple, Khetarpal Pol, Ahmedabad.



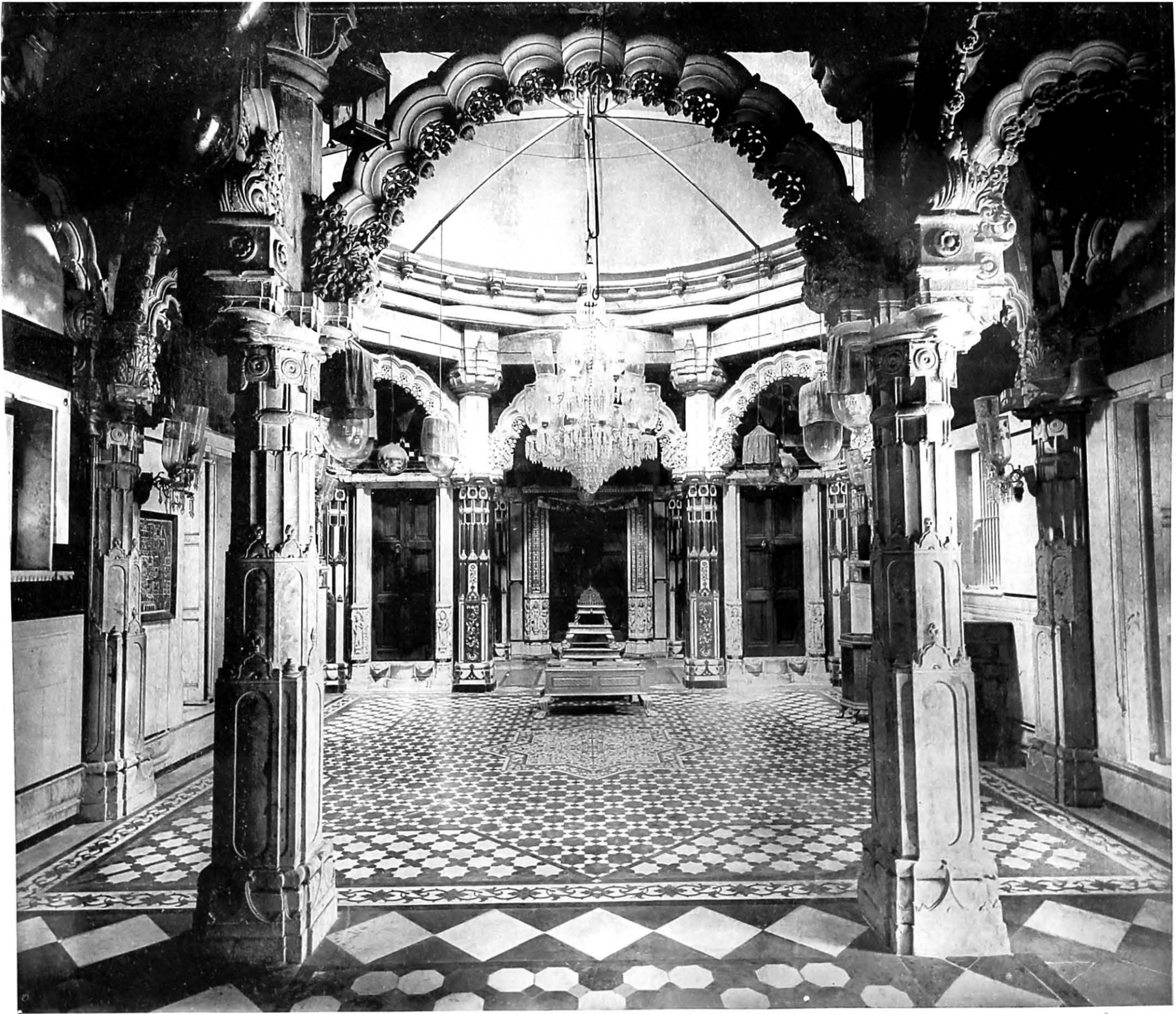
Inlay from Temple shown in Plate VI.

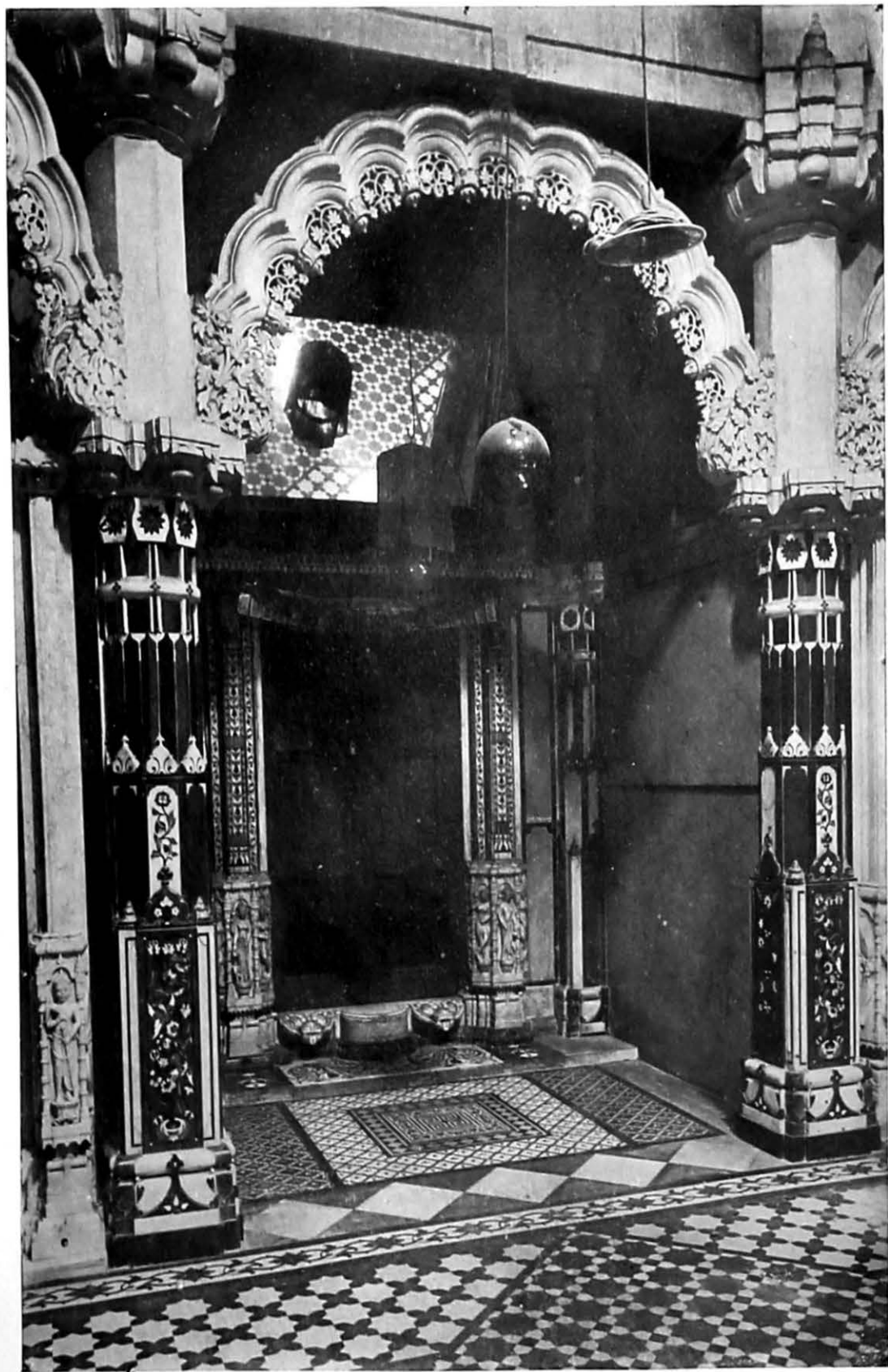


Facades of Parsvanath's Temple, Wagan Pol, Ahmedabad.

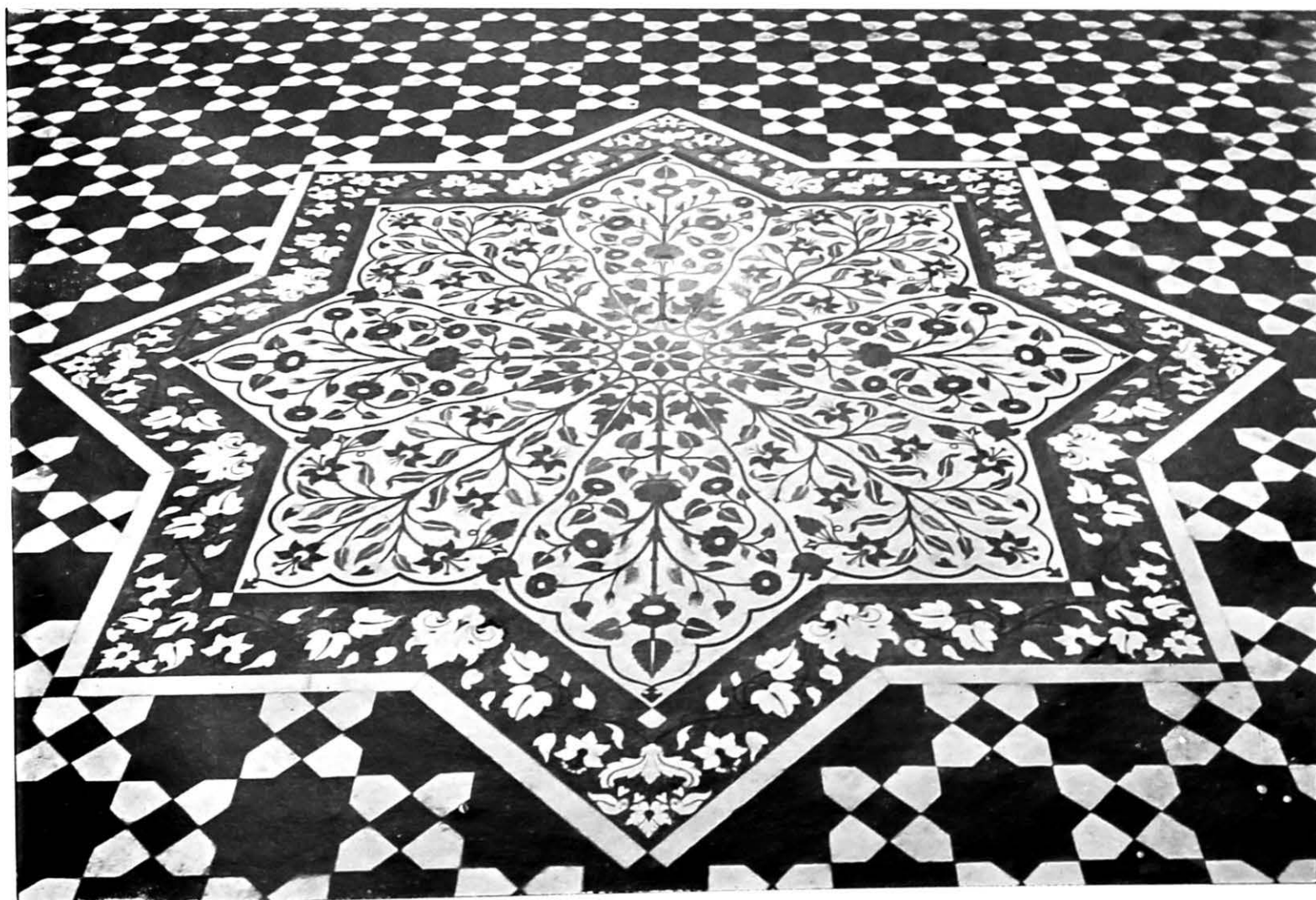
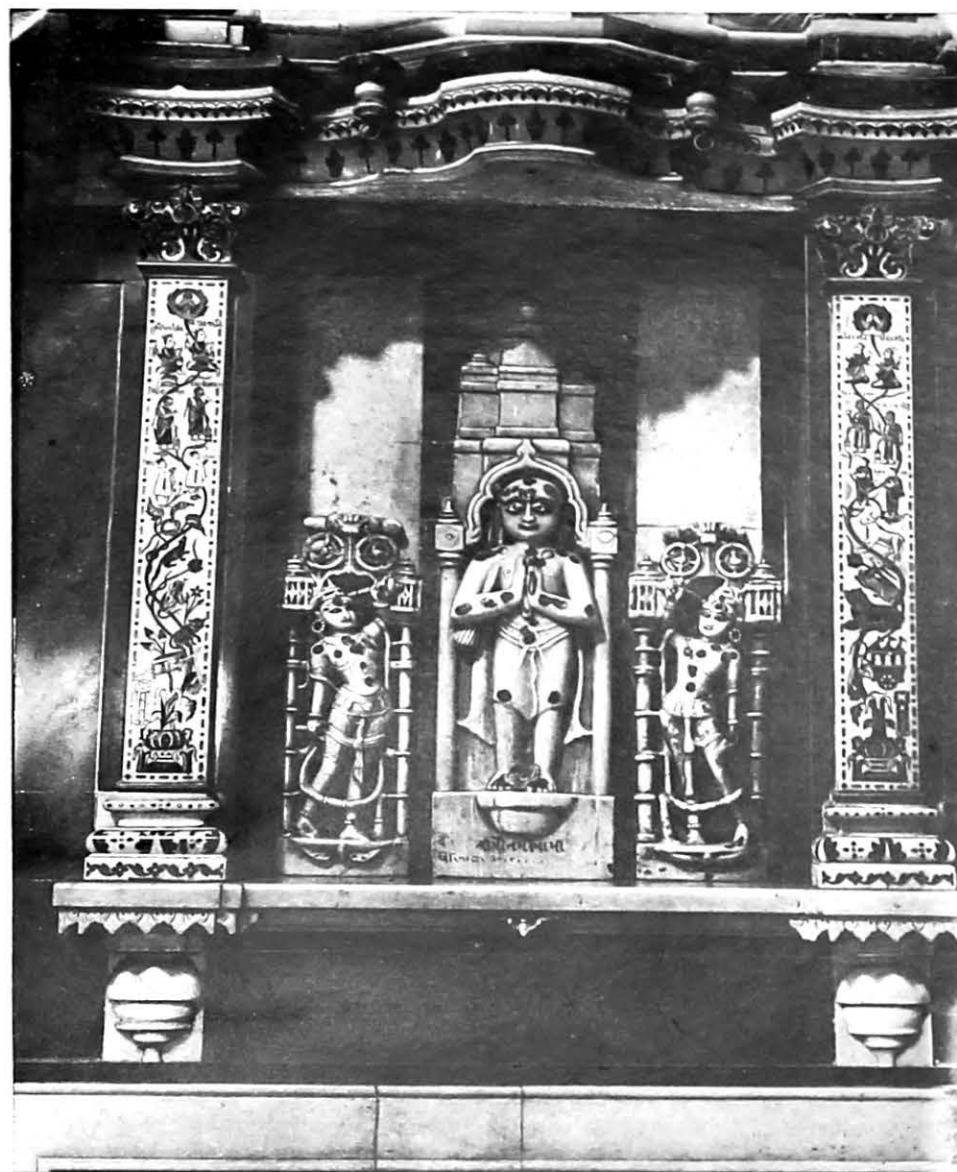


Interior of Temple shown in Plate VIII.

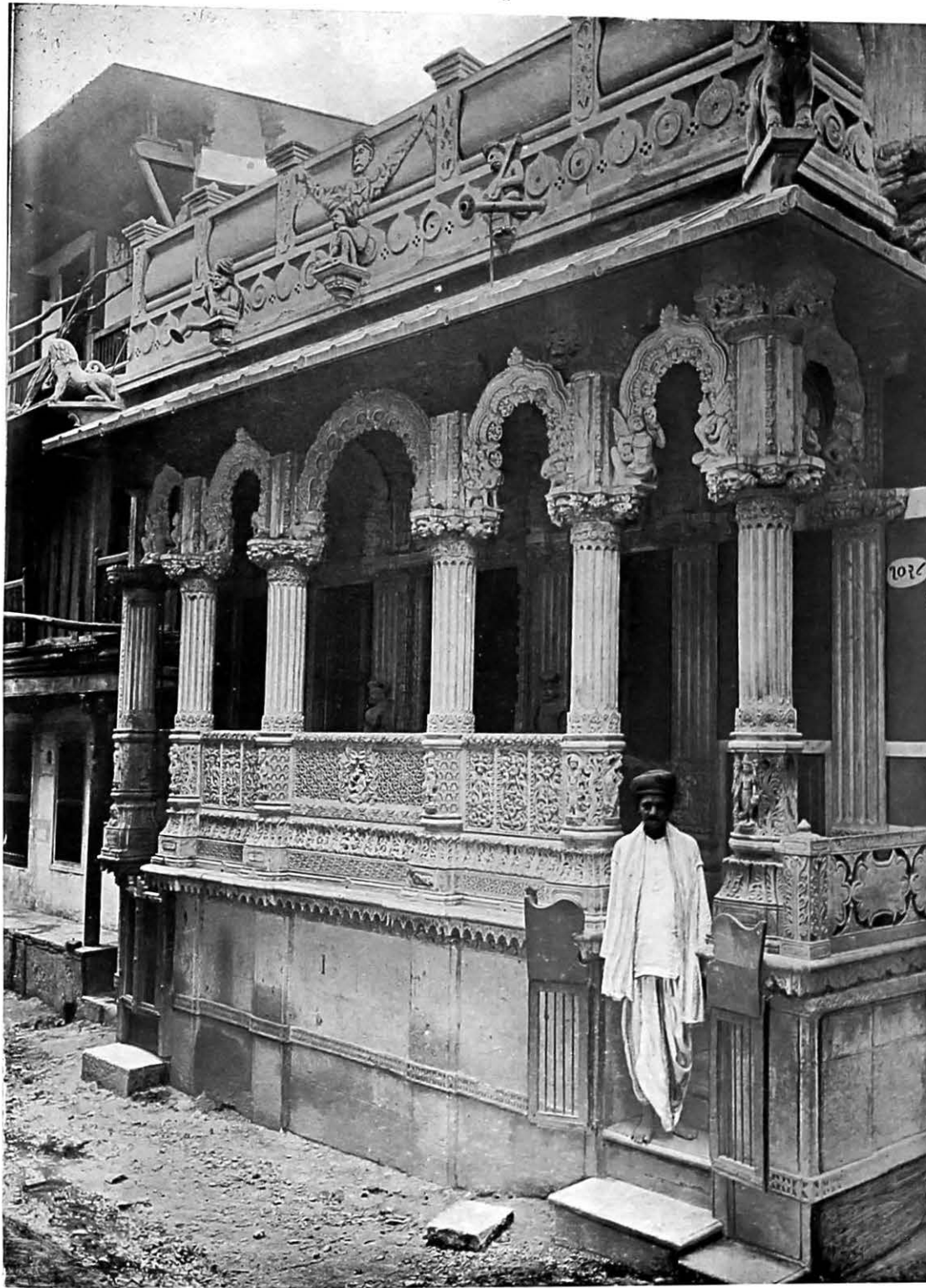




Inlays and carved work from Temple shown in Plate X



Inlaid niche-pilasters and centre-piece from Temple shown in Plate X.



Facade of Ajitnath's Temple, Kalasi Pol, Ahmedabad.



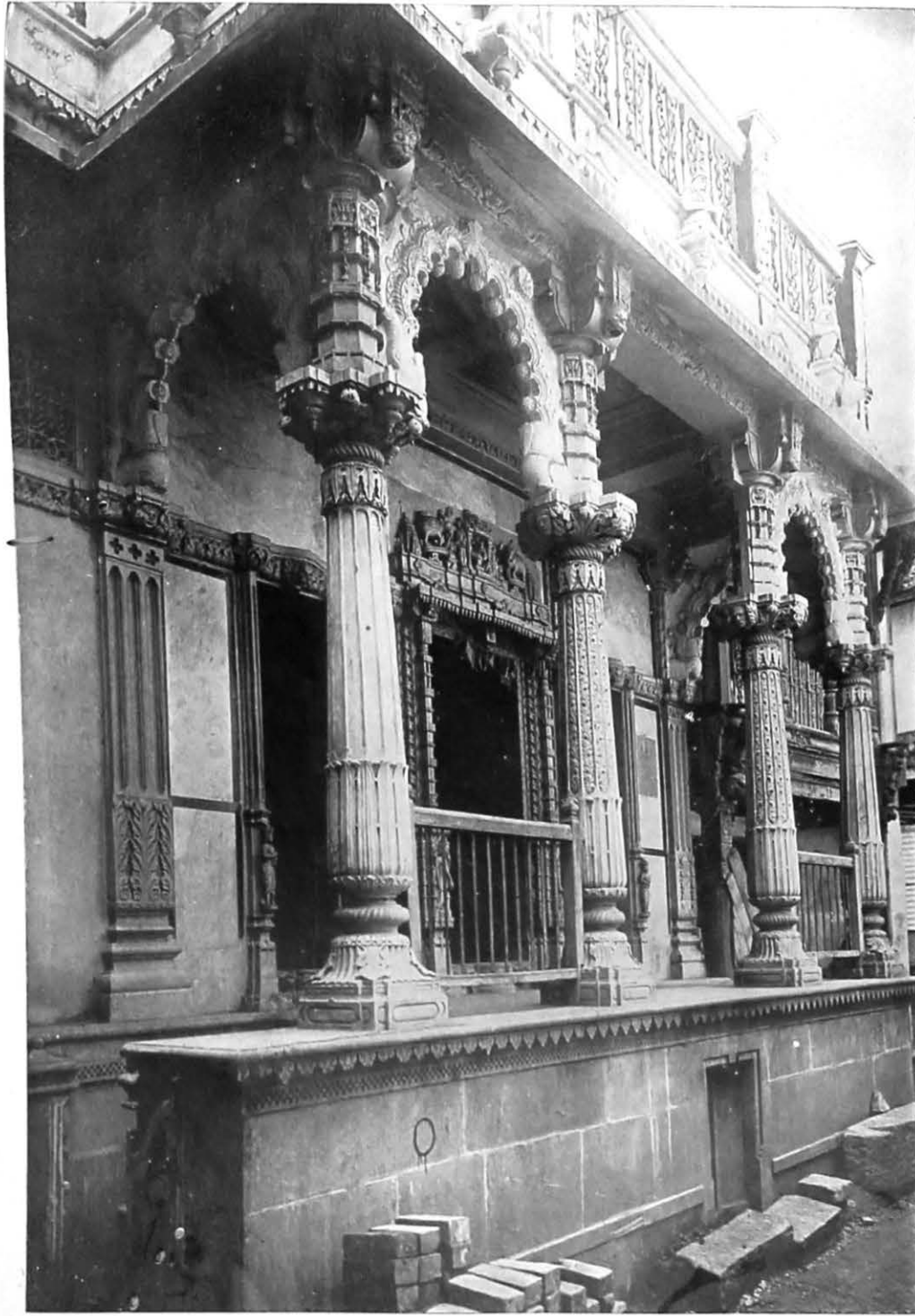
Interior and inlaid centrepiece from Temple shown in Plate XIV.



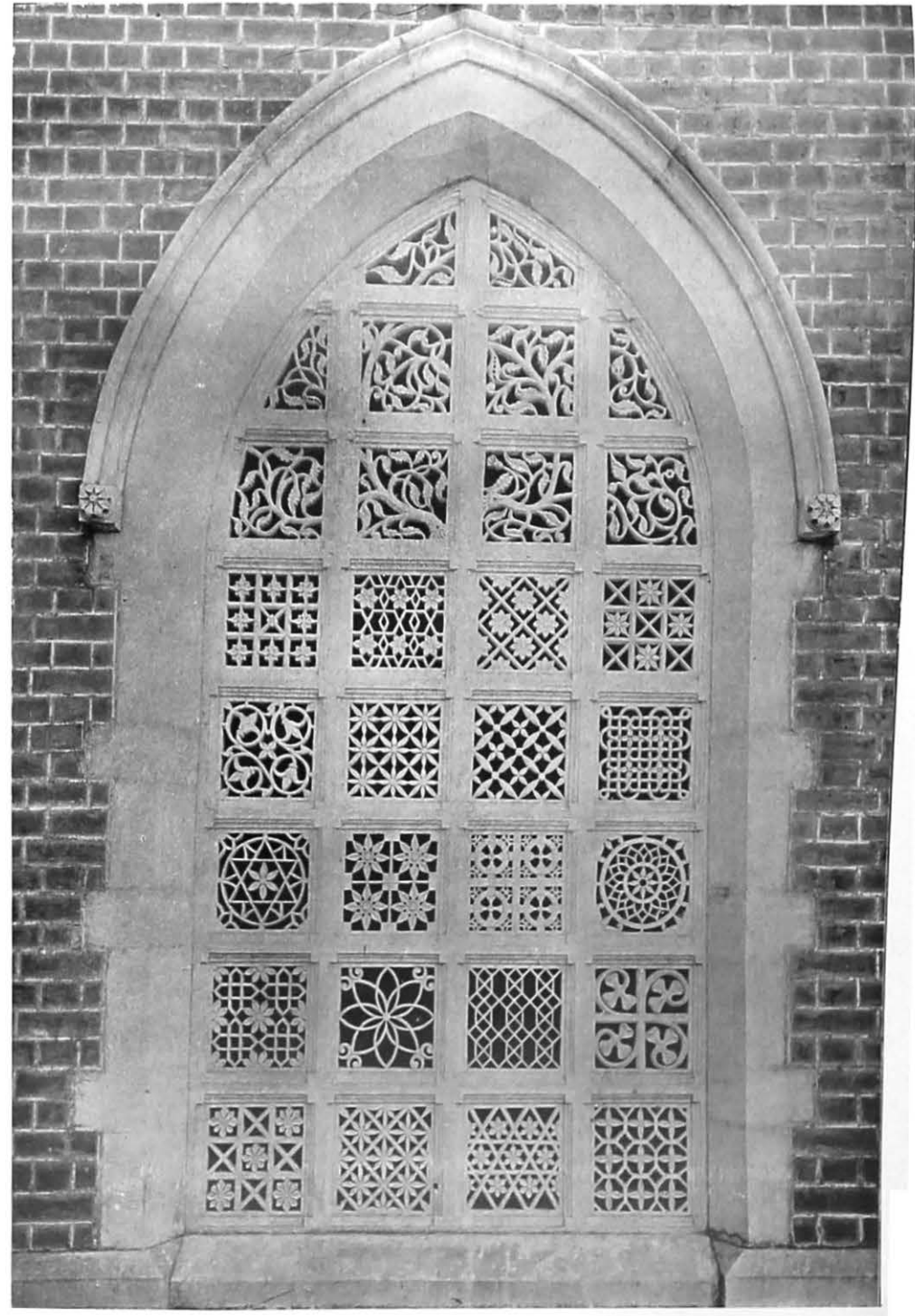
Sambhunath's Temple in Chang Pol, Ahmedabad.



Niche from Suridhinathi's Temple, Kakabalya Pol, Ahmedabad.



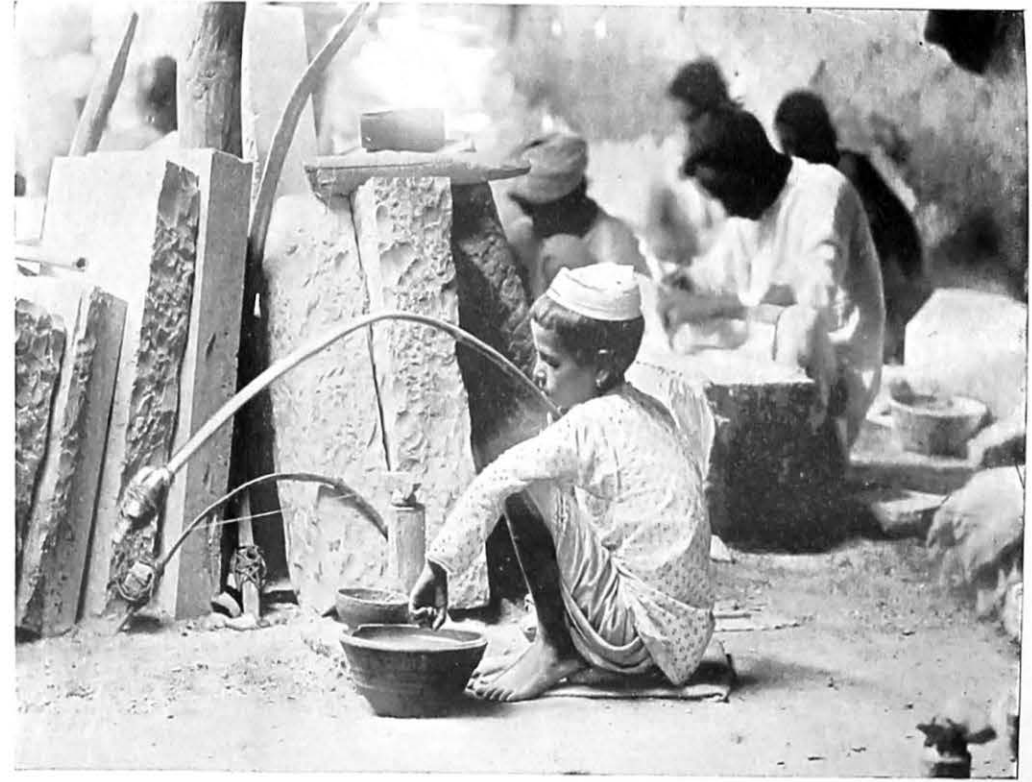
•
g Facade of Savidhinaths Temple Nahabalya Pol, Ahmedabad.



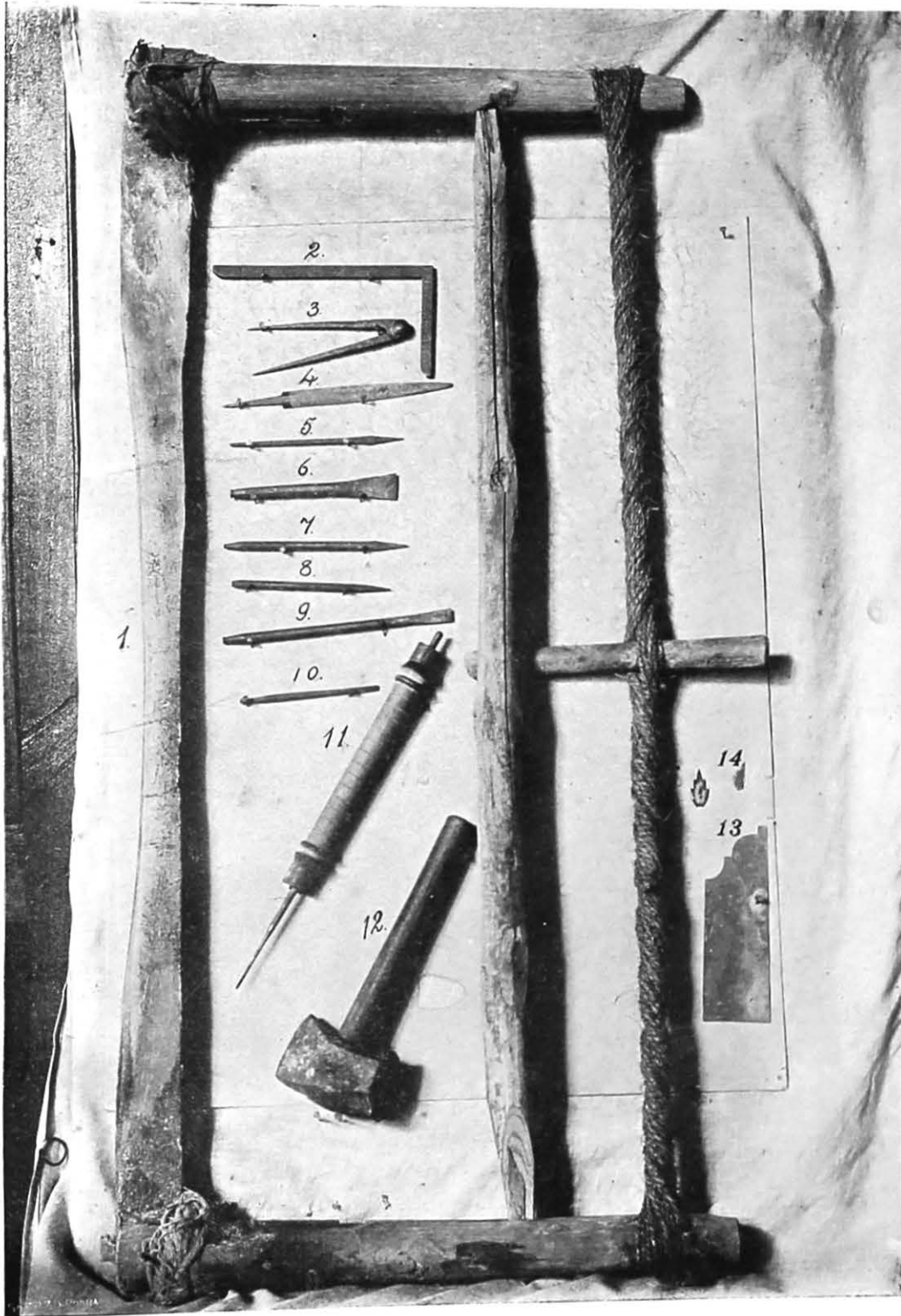
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Pierced porch-window in Irish Presbyterian Mission Church, Ahmedabad.



Carved work for Temple in Patasa Pol. Ahmedabad.



Inlaying in progress Pada Pol, Ahmedabad.

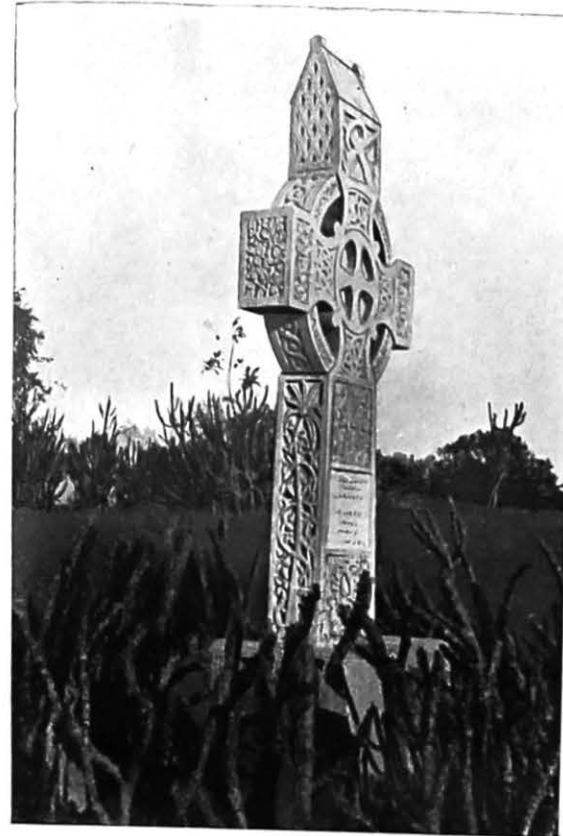


Carving and inlaying tools.

1

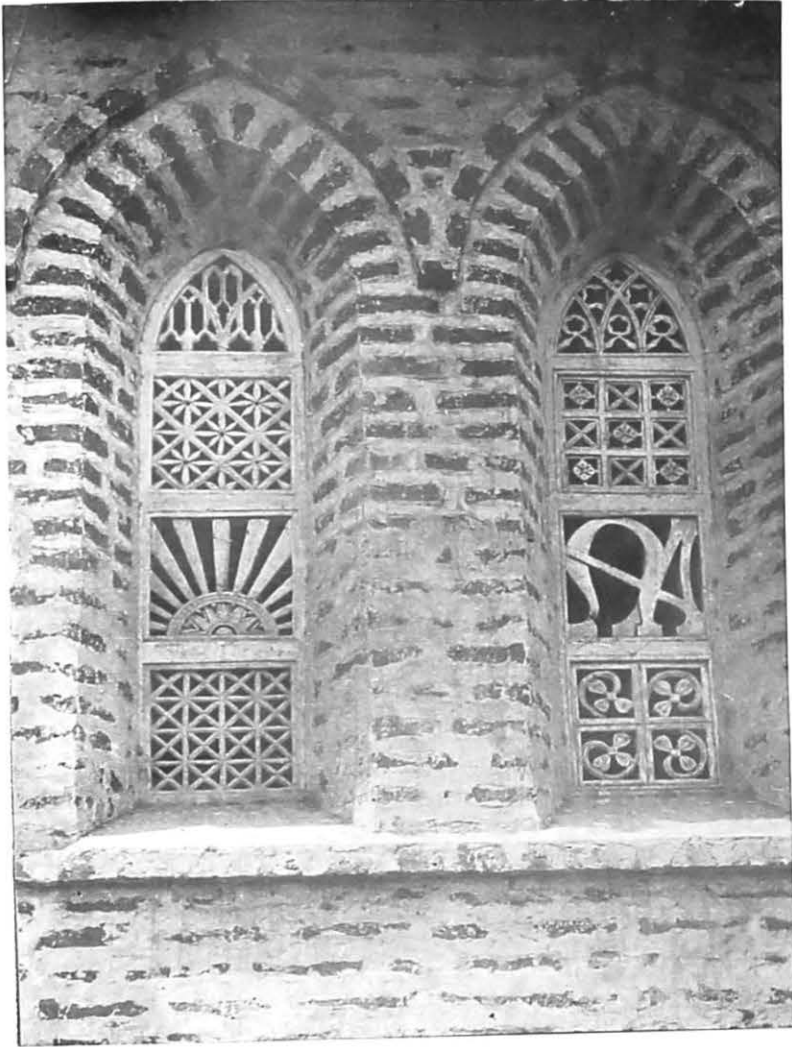


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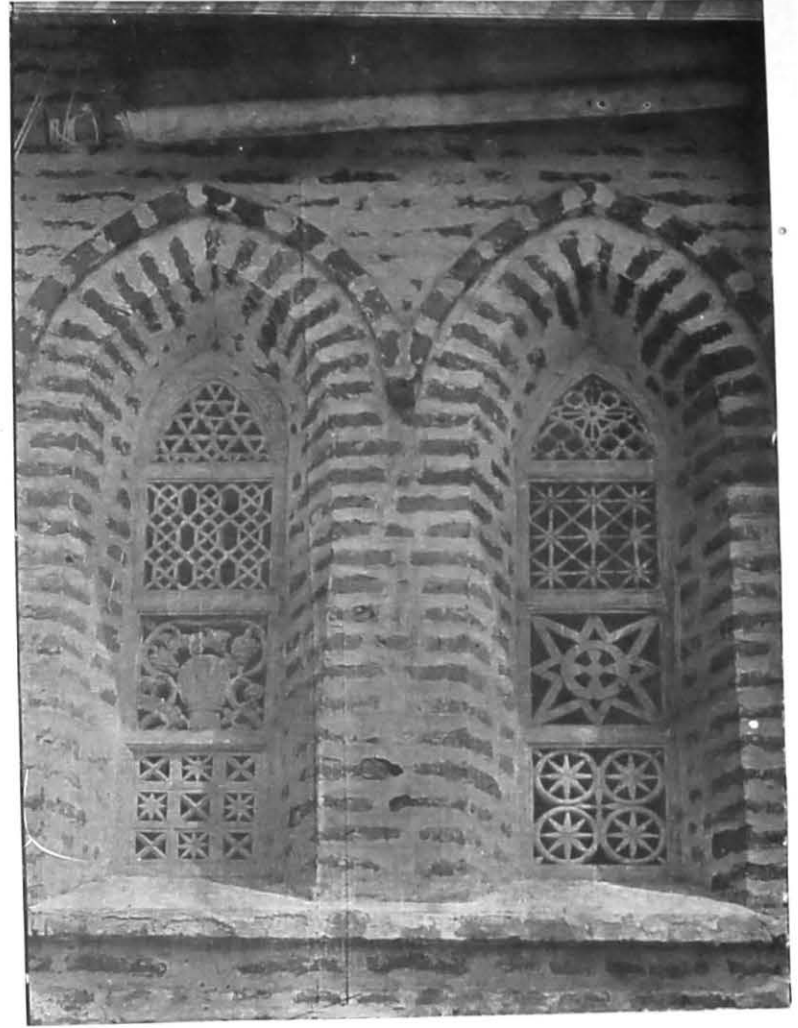


Celtic Cross, Irish Presbyterian Mission Cemetery, Parantij Ahmedabad.

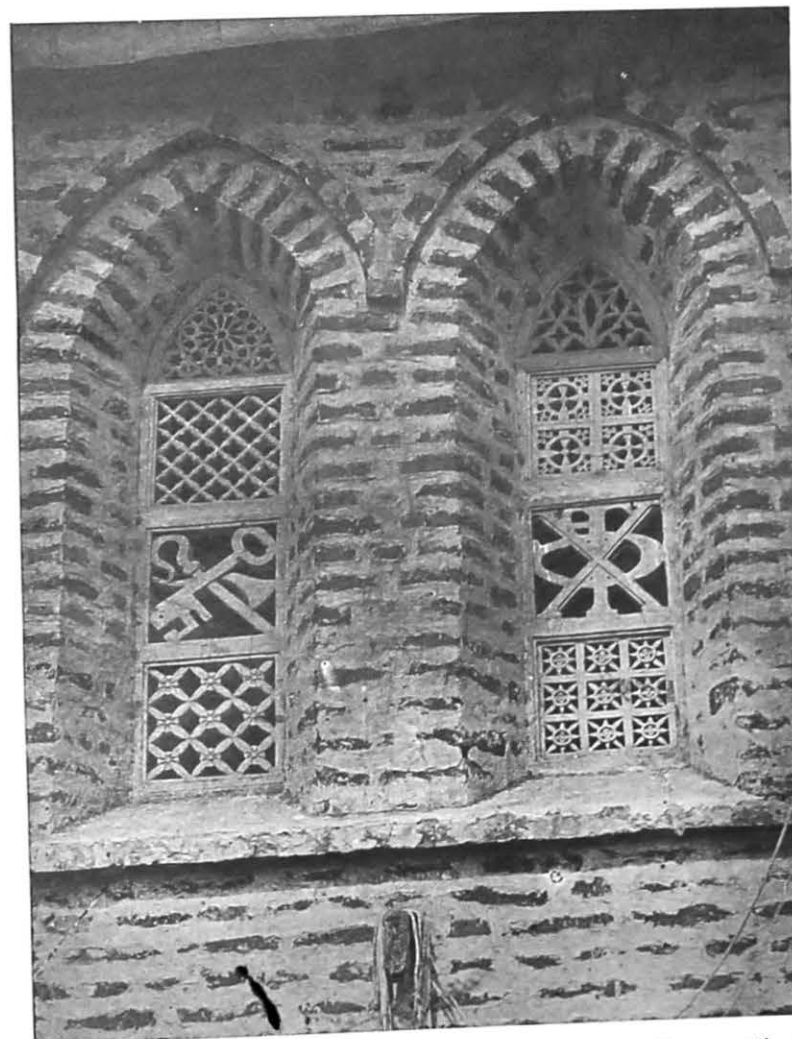
I



2



3



Pierced windows, Irish Presbyterian Mission Church, Farantij, Ahmedabad.