

Indian Shields in the National Museum, New Delhi: Ornamentation, Typology, and Cultural Significance

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Abstract

Indian shields (dhal or sipar) from the Arms and Armour collection of the National Museum, New Delhi, embody a remarkable synthesis of martial functionality, artisanal innovation, and symbolic depth across centuries of South Asian history. This comprehensive article analyzes over 62 specimens, primarily dating from the 16th to 19th centuries, through a systematic classification of their ornamentation techniques—damascening, koftgari inlay, lacquering, painting, engraving, embossing, repoussé, enameling, studding, Bidri work, and pahri construction. Drawing on textual authorities like the *Arthashastra*, *Dhanurveda*, Mughal chronicles (*Ain-i-Akbari*, *Baburnama*), epigraphic inscriptions, and archaeological evidence from Bhimbetka, Sanchi, Bharhut, Ajanta, and Pallava temples, the study elucidates how these artifacts evolved from prehistoric hide protections to ornate steel masterpieces. Regional aesthetics—Rajasthani floral medallions, Mughal syncretic motifs, Deccani hunting scenes, Tanjore gold damascening—reveal patronage networks, technological exchanges (wootz steel via Persian routes), and religious syncretism (Quranic "Nad-i-Ali" alongside Narayana Kavacha mantras) (Irvine 1903). Shields emerge as "mobile cultural signifiers," encoding status, identity, and protection in warfare, courts, and ceremonies. Through detailed typological frameworks, material analyses, palaeographic interpretations, and cultural contextualization, this research argues for their centrality in understanding premodern India's martial-visual heritage, with recommendations for conservation and digitization.

Keywords: indian shields, damascening, koftgari, inlaying, ornamentation techniques, National Museum collection

1. Introduction

Crafted in the crucible of conflict and carried as emblems of honor, India's shields stand as mute chronicles of enduring courage, masterful artistry, and sovereign authority. The National Museum in New Delhi safeguards an invaluable assembly of Indian arms and armor, among which shields form a cornerstone of this extraordinary collection. These artifacts, once integral to warfare and ceremonial display, transcend their utilitarian function to embody technological

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advancement, regional craftsmanship, and aesthetic sophistication. The study of Indian armours, particularly shields, offers critical insights into the historical evolution of warfare, artisanal skill, and cultural identity across centuries. Far from being mere instruments of defense, shields functioned as National markers of social status, artistic expression, and regional identity. From the elaborately ornamented battle shields associated with Mughal emperors to the robust, utilitarian gear employed by infantry, Indian shields exemplify the dynamic interplay between functionality and visual culture. Historical narratives, archaeological evidence, and artistic representations collectively underscore their significance in India's martial tradition and cultural memory.

This research foregrounds the dual role of shields as both protective devices and cultural artifacts. Within the Museum's collection, the shields have been methodically classified based on their techniques of ornamentation, revealing a wide array of artistic practices employed by Indian craftsmen. These include intricate engraving, embossing, damascening, and lacquer work—each method reflecting a distinct regional aesthetic and technical tradition. Through this lens, the study not only documents the evolution of military craftsmanship but also situates these objects within broader artistic and symbolic frameworks. The examination of shield ornamentation thus offers valuable perspectives on how warfare, artistry, and cultural identity were interwoven in the historical landscape of the Indian subcontinent.

2. Literature Review

Scholarship on Indian arms and armour has evolved through distinct historiographical phases, transitioning from colonial documentation to sophisticated technical and cultural analyses. Egerton (1880, 1896) established foundational typologies of defensive equipment, cataloguing battlefield roles within pre-modern warfare traditions. Mid-20th-century research pivoted toward artisanal processes: Pant (1978) provided authoritative studies of medieval metalworking techniques, complemented by Goetz's (1954) examinations of regional combat equipment morphology and material culture.

Post-independence scholarship emphasized aesthetic and patronage dimensions across regional ateliers. Losty (1990) documented southern decorative traditions, while Stronge (2009) and Randhawa (1963) traced northern imperial influences and community-specific ornamentation practices, illuminating cross-cultural synthesis within early modern courts.

Contemporary material culture studies integrate scientific methodologies—Crill (2010) advanced metallurgical analyses, Balachandran (2018) contributed organic preservation research—while Elgood (2004) elucidated evolving iconographic programs reflecting religious-political transitions. Despite these advances, comprehensive institutional analyses remain scarce, particularly those synthesizing surface technologies, epigraphy, and chronological frameworks.

3. Research Methodology

This study employs a multi-layered methodology to analyze shields in the National Museum's Arms and Armour collection, integrating visual documentation, comparative analysis, material study, and historical contextualization to examine ornamentation (engraving, embossing,

damascening, lacquer work, gilding, enameling), materials (metals like iron/steel/brass/gold/silver; organics like hide/leather/bamboo/wood; enhancements like lacquer/gems/paint), structural features (curvature, thickness, diameter), and epigraphical inscriptions/painted designs on leather shields. Shields are categorized by ornamentation techniques to identify stylistic trends, regional craftsmanship, and technological advancements, while historical analysis via archival records, manuscripts, and catalogs traces their roles in warfare, royal insignia, ceremonies, and art traditions featuring miniature paintings/icons. Synthesizing these layers reveals patterns linking artistic expression, functional utility, patronage, and martial culture, positioning shields as cultural signifiers of symbolic authority and historical narratives in the Indian subcontinent.

4. Historical Evolution of Indian Shields

Warfare, as a political institution constitutive of kingship, necessitated defensive technologies from antiquity (Dikshitar 1944). Shields evolved from Palaeolithic survival implements to sophisticated instruments paralleling the Neolithic transition, where agricultural defence demanded organized protection. South Asian martial culture manifests in Palaeolithic stone tools (Sinha 1965) and third-millennium BCE Indus Valley fortifications at Mohenjodaro and Harappa, suggesting proto-shield technologies alongside bronze weaponry. Mahājanapadas and Mauryan texts reference śirastrāṇa/śiraḥpattī shields, with Kauṭilya's Arthaśāstra codifying shield-bearing infantry tactics (Chakravarti 1941). Prehistoric rock art at Jogimara and Bhimbetka depicts circular/curved shields of leather, wood, and bamboo (Pant 1970:11).

Vedic literature distinguishes charma (rawhide) and varutha (wooden) variants, while Rāmāyaṇa/Mahābhārata describe bull-hide shields with celestial/studded ornamentation (Droṇaparva, Bhiṣmaparva). Buddhist Divyāvadāna (6th c. BCE) mentions khetaka shields (Pant 1978). Greek historians Arrian and Quintus Curtius document Porus's ox-hide bucklers during Alexander's invasion (326 BCE), praising their cavalry/infantry efficacy (Arrian 1976; Pant 1982). Indo-Greek coinage of Menander/Agathocles depicts Medusa-emblazoned deity shields (Pant 1970). Sanchi, Bharhut, Bhilsa, Udaygiri, and Amaravati reliefs (1st c. BCE) illustrate diverse morphologies—circular, conical, rectangular, wicker—persisting in Orissan caves (200 BCE–474 CE) and Ajanta frescoes (Egerton 1880). Vardhana records (606–647 CE) affirm institutional military roles (Pant 1978).

Early medieval innovations include Ghori's 12th-century karwa (padded rawhide) and Balban-era metallisation (Pant 1982). Mughal texts (Baburnāma, Ain-i-Akbari) classify sipar/dhal with embossing, engraving, and damascening; Persian-influenced miniatures depict ceremonial/cavalry variants (Pant 1970). Arabic/Persian/Hindi inscriptions denote ownership from Sultanate times, with National Museum specimens predominantly 16th–19th century exemplars (Pant 1982). This continuum—from rudimentary survival aids to ornate sociopolitical semaphores—encapsulates technological adaptation, martial pragmatism, and cultural signification across South Asia's historical epochs.

5. Typological Frameworks and Taxonomy of Shields in India

Indian shields represent a remarkable synthesis of martial functionality and artistic expression, evolving through diverse regional traditions and political contexts. Far beyond mere defensive

tools, these artifacts served as status symbols, cultural identifiers, and technical achievements, with their typological variety reflecting India's vast geographical and historical complexity. Kauṭilya's Arthaśāstra (c. 3rd–4th century BCE) provides the earliest systematic classification of defensive armaments, enumerating śira-trāṇa (head protection), kaṇṭha-trāṇa (neck guard), pethi, resumendaka (leather hand-shields), tala-mūla (wooden shields), bhamanika (reed-based shields), and valāhakaṇṭha (composite shields of leather or bamboo reinforced with iron fittings). These categories reveal a sophisticated early understanding of material properties and tactical applications (Shamasastri 1915).

The Dhanurveda further categorizes shields within the amukta (held weapons) group alongside swords and maces, distinguishing them from thrown, mechanical, or mystical weaponry, thus establishing their core role in hand-to-hand combat (Ray 2003). Sātavāhana period (2nd century BCE–2nd century CE) iconography at Sanchi, Ajanta, Mamallapuram, and Kanchipuram depicts two dominant forms: rectangular, slightly convex shields and circular/bell-shaped varieties adorned with stars, crescents, and floral motifs, suggesting both functional and symbolic dimensions. Pallava temple reliefs from Mamallapuram and Kāñcīpuram continue this typology in Śaiva contexts, confirming continuity and regional elaboration.

Mughal-era texts document further diversification. The Baburnama references siege mantlets and spherical convex shields, while Thomas Moore classifies chirwah and tilwah (Akbar's bodyguards), dhar or khera (fencing shields), phari (cane construction), maru or singaula (antelope horn), and sainti (specialized parrying shields). Abul Fazl's Ain-i-Akbari details infantry (ahsham) shield types, highlighting their ceremonial and documentary significance (Pant 1970). Material classifications reveal functional and hierarchical stratification. Organic hides from buffalo, rhinoceros, and elephant—valued for impact resistance—underwent lacquering and painting for preservation and decoration. Elite variants employed crocodile and tortoise shell (Junagadh, Rajasthan specimens), while Kutch craftsmen boiled hides for translucency before gilding. Metal shields of forged iron, steel, or brass dominated Mughal/Rajput production, offering durability for surface techniques and noble insignia value (Egerton 1880; Pant 1970).

Vegetal construction using cane, bamboo, and softwood—often fabric/leather-reinforced—characterized tribal craftsmanship, prioritizing lightness over robustness while maintaining decorative traditions (Pant 1982). Islamic influences under the Mughals produced elite dhals with inlaid verses and intricate mounts for ceremonial display (Tirri 2003; Eaton 2008).

This typological evolution—from Arthaśāstra's functional array to Mughal ornamental splendor—mirrors the transition from battlefield necessity to courtly prestige, with each material and form encoding regional availability, technical innovation, and sociopolitical hierarchy across India's martial history.

6. Ornamentation Techniques of Indian Shields in National Museum Collection: A Typological Categorization

The surface treatment and ornamentation of Indian shields, across all technological types, reveal a remarkable confluence of functional design and cultural expression. These objects were not merely instruments of defense but also served ceremonial, symbolic, and aesthetic

purposes. Hide shields often featured painted or punched motifs, while metal ones demonstrated exceptional craftsmanship through methods such as engraving, inlay, and relief work. The presence of religious or mythological imagery, royal insignia, or calligraphic elements underscores their dual role as instruments of war and artifacts of representation. Richly ornamented shields were typically reserved for the nobility or high-ranking military officials, conveying social status and artistic patronage. The techniques employed in their decoration reflect regional traditions, technological innovations, and evolving courtly tastes. This study organizes more than sixty such shields into six principal categories, each defined by the method of ornamentation: Damascening, Inlaying, Koftgari, Enamelling (Meenakari), Lacquering, Studding, Bidri, Pahri, and Painting (Pant, 1970).

6.1. Damascening

Among various ornamentation techniques, damascening commands distinction for its metallurgical sophistication and subtle visual elegance, fundamentally distinct from inlay work. This specialised art form engages high-carbon steel through precise thermal manipulation—controlled crystallisation wherein molten steel cools gradually before forging at temperatures just exceeding cherry-red heat (ca. 750-800°C). The resultant "watered" patterns, evocatively likened to nets over flowing streams, silk skeins, undulating watered steel waves, or yellow sand's mottled grain, emerge organically from crystalline lattice formation rather than manual incision. Predominantly associated with sword blades, its rare application to distinguished shields signals exceptional aesthetic discernment. Scholarly literature frequently conflates damascening with surface inlay, demanding terminological precision (Pant 1970).

Dr. Percy elucidates in *Metallurgy of Iron and Steel* that damask effects derive from differential acid etching: iron yields metallic lustre while steel forms black carbonaceous residue. Artisans strategically layered iron/steel bars, forged-welded them, then hammer-extended to generate motifs analogous to elongating polychrome glass rods—a profound metallurgical poetry manifesting across the National Museum's shield corpus. Analysis: Of 62 catalogued shields, 12 specimens (19.4%) manifest damascening as primary ornamentation: five wootz steel, three watered steel, four Damascus steel (33-59 cm diameters)—optimally proportioned for ceremonial exhibition and battlefield efficacy (Pant & Sharma 2001). These articulate three principal regional ateliers: Mughal (North India), Tanjore (Tamil Nadu), and Rajasthani (Western India).

Rajasthani Cohort (4 shields, 40.5-57 cm): Bimetallic composition—steel (×2), Damascus (×1), watered steel (×2)—uniformly circular-convex with upturned brims; one augmented with thickened protective rim. Profuse koftgari gold damascening adorns concentric floral/creeper registers; exemplary specimen exhibits total surface coverage with a central octapetalous Mewar-esque medallion. Combat reinforcement via a supplementary steel plate distinguishes utilitarian function. Semi-precious lithics (ruby/emerald/sapphire) articulate knobs/borders beside auric inlays; knobs vary (three undecorated, one elaborately koftgari). Verso: quadrupedal ring bolts, crimson velvet quilting, zari-embroidered peacock/floral schemata (×2). Principal dating: 18th century (one 17th); fair conservation status.

Tanjore/South Indian (4 shields, 33-40.5 cm): Diminished scale—steel ($\times 2$), watered/Damascus steel; convex with upturned rims (beaded variant, metal-frame reinforcement). The tila gold damascening envelops three specimens entirely (floral/creeper/geometric); bipetalous crescent/creeper borders are universal. Quadripartite floral umbel knobs evince repoussé/appliqué/auric gilding. Verso: scarlet velvet/cotton wadding ($\times 3$) with embroidered flora, square bolsters, didactyl leather ergonomics.

Mughal (3 shields, 44-59 cm): Damascus/watered steel; convex, upturned rims. Lavish gold damascening traverses floral/creeper/geometric topoi; syncretic crowned solar anthropomorph (Mewar Rajput sigil), nigro-virid lacquer substrate, steel fillet reinforcement. Cupolae knobs with auric inlay/vitreous inserts; Safavid "Az Sarkar Shah Abbas" epigraphy. Verso: quadrupedal bolts, square bolster/didactyl ligatures, crimson velvet zarbuland ($\times 2$). 17th - 18th century provenance. These exemplars illuminate regional metallurgical dialectics, transcultural exchanges, and the dialectical tension between martial pragmatism and ornamental sumptuosity constitutive of early modern Indic arms semiotics.

6.2. Inlaying

Inlaying constitutes one of the most refined and enduring decorative techniques within Indian arms and armour, entailing the embedding of precious metals—gold, silver, or copper—into harder iron or steel matrices to engender visually arresting patterns. The process initiates with the incision of fine grooves or cross-hatched lines via burin or chisel. Ultrafine wires or foil of pliant metal are thenceforth meticulously hammered into these prepared channels. Subsequent filing, burnishing, and polishing yield resplendent inlay contrasting starkly against the dark, oxidized armature (Pant 1980). The preeminent variant, koftgari, overlays softened metal upon roughened substrates sans profound channels, facilitating exquisitely attenuated scrolling vines, geometric friezes, and religious epigraphy—predominantly Qur’anic versets or sovereign nomenclature. Veritable inlay, demanding deeper excavated furrows for secure interment, manifested less frequently.

Dr. G.N. Pant elucidates these methodologies' symbolic transubstantiation of armaments into venerated talismans, particularly within Mughal durbars or sacerdotal rites. Inlaying attained apotheosis beneath Mughal sovereigns (16th - 18th centuries), wherein courtly munificence catalysed Perso-Indic decorative synthesis. Mughal khanjars, talwars, matchlocks, and jhazail evinced auric/argentine inlays animating arabesques, lotuses, imperial laudations. Rajput, Marāṭhā, Sikh praxis appropriated inlaying, interweaving regional semiotics with bellicose thematics. Elaborately encrusted heirlooms incarnadined bearers' prowess, station, devotional fervour; hallowed inscriptions imputed prophylactic divinity (Pant 1978). Nine National Museum shields manifest inlaying as principal ornamentation, articulating Rajputana (Rajasthan, 7), Mughal (North India, 1), Awadh (North India, 1) ateliers (Pant & Sharma 2001).

Rajput Shields (17th -early 19th c.): Steel ($\times 4$), Damascus steel ($\times 2$), iron ($\times 1$); 33.5-61.67 cm, circular-convex with upturned/serrated brims, riveted steel fimbriations. Didactyl auric floral/creeper inlay coronas; singular paragon parades complex anthropomorphs, fauna, avifauna, ophidian schemata (attenuated gold). Central medallions featuring eight-petalled designs, resplendent with gold leaf gilding; knobs displaying varied treatments (plain, serrated-

edged, or adorned with floral inlays). Quadrupedal ferreous/aclous ring bolts; most conserve primigenial wadded doublures—coccineus/virid/luteus/purpureus velvet with zari floral/creeper broideries. Virid satin wadding, Teh-nishan precision inlay preëminent upon ferreous exemplar; gilding, damascening, perforate fimbriations ubiquitous.

Awadh "Dhal Muradabadi" (18th c.): Ferreous with æs circular intarsio bearing albus/luteus floral/geometric argentine inlay, upturned labia, quadripartite cupolae knobs. Floral/creeper/piscine motifs with Shi'a Qalam inflection. Verso: plumbum stannum coating, inornate interior knobs, quadrupedal aclous ring bolts. Mughal Shield (late 18th c.): Ferreous, 40.7 cm, sumptuously inlaid intricate floral/creeper schemata, duodecapetalous central floral knob. Verso: coccineus cloth doublure, bipedal bombacin ligatures. These inlaid shields evince technical virtuosity and regional æsthetic plurivocality, transmuting bellicose apparatus into prestige semaphores encoding cultural synthesis and patronal hierarchies.

6.3. Koftgari Technique

The Koftgari technique constitutes a paramount tradition in Indian decorative metalwork, achieving prominence during the Mughal period (16th -18th centuries). This art form entails inlaying gold or silver onto iron/steel surfaces—manifesting on sword hilts, daggers, and shields. Beyond artistic embellishment, Koftgari signified power and prestige, elevated through imperial patronage for ceremonial/symbolic functions. Though linked to Middle Eastern damascening, its Indian iteration synthesized indigenous craftsmanship with Persian-Islamic aesthetics (Indian Handicraft 1968).

Koftgari flourished amid the Mughal artistic zenith, as emperors attracted Islamic world artisans. Artefacts transcended weaponry to serve diplomatic roles as regal gifts or displays of sovereignty, demonstrating technical mastery (Pant 1982). Technical Process: Koftgari employs cold inlay, distinct from damascening's heat treatment. Steel is roughened with fine chiseling, creating crosshatched patterns. Ultrafine gold/silver wires/foils are impressed into this matrix via specialized tools and burnishing, forming mechanical bonds. Polishing and background blackening enhance precious metal contrast, enabling intricate arabesques, calligraphy, and florals.

Symbolically, floral/vegetal motifs echoed Mughal Garden aesthetics; Qur'anic inscriptions conferred spiritual authority—epitomizing Islamic-Persian-Indic visual synthesis. Of twelve shields, two feature Koftgari ("false damascening") as primary ornamentation: Punjab (steel, 17.5 cm ø) and Rajasthan (Damascus steel, 48.5 cm ø) (Pant & Sharma 2001). Punjab's pronounced convexity/beaded rim bears dense gold floral/creeper motifs with a central rayed sun (martial iconography). Rajasthan's shallower form concentrates border decoration, gilding faded by attrition. Both reverses show elite red velvet with yellow cushions, balancing aesthetics/comfort. These regional variants—central vs. peripheral emphasis—underscore Koftgari's stylistic diversity in Indian martial traditions.

6.4. Lacquer work: Plain & Painted

Lacquer work represents a decorative and protective art form with deep roots in Indian craft traditions. As detailed in G. Koizumi's *Lacquer Work: A Practical Exposition*, the term

"lacquer" originates from India, where "resin lac" produced by the *Coccus lacca* insect formed crusts on tree branches. Processed into shellac and dissolved in alcohol, this varnish coated wood and metal household objects. Indian lacquer influenced 17th-century European practices, while distinct from Chinese/Japanese Urushi (tree sap requiring humidity to harden). Koizumi notes that Indian lacquer's accessibility suited functional items like shields, providing durable aesthetic finishes (Koizumi 1925). The National Museum's lacquered shields are divided into plain (9) and painted (14) categories among 23 total specimens, applied over hide to enhance preservation and visual appeal.

6.4.1. Painted Lacquer Shields

Leather hide painting, practiced in Andhra Pradesh, Odisha, Karnataka, and Maharashtra, blends utility with storytelling through shadow puppetry traditions like Tholu Bommalata and Ravana Chhaya. Goat, deer, or buffalo hides—cleaned, sun-dried, treated with natural softeners—become translucent parchment canvases. Artisans sketch designs with charcoal/stylus, apply plant/mineral pigments, and sometimes perforate surfaces for luminous effects (Pant & Sharma 2001). Fourteen shields originate from Rajasthan/Rajputana (Udaipur, Mewar), crafted from thick rhinoceros/other durable hides (17th -18th centuries CE). Circular, slightly convex (42-54 cm diameters), both surfaces lacquer black/brown as decorative base. Gold floral/creeper/guldasta (bouquet) motifs dominate Rajput court aesthetics.

Maharana Sangram Singh II of Mewar (c.1740 CE, 2 shields): Fully black lacquered, painted with elaborate shikargah (hunting) scenes—tigers vs. bear/boar/stag/rhinoceros in red/green/grey/brown/gold. Central crowned anthropomorphic Sun (human face, golden rays) signifies Mewar royal insignia, emphasizing ceremonial value. One divides into eight narrative panels chronicling royal expedition from departure to elephant-return at the palace, rendered in lacquer red/carbon black/gold—commemorative function. Jaipur specimen (c.1780 CE, 47.1 cm): Rhinoceros hide, double-serrated black lacquer border, four gold/earthy floral/creeper panels surround central medallion. Reverse: green velvet-padded square center (reinforced corners), two rough leather straps on iron hooks. Knobs perforated/serrated, gold damascened florals.

Knobs/bosses vary elaborately: perforated/serrated gold damascening; crescent repoussé florals; ivory narrative/mythological carvings (lion devouring mythical creature, seated lion); silver floral repoussé; brass/gold-plated semi-precious stone rims. These elevate utilitarian objects to courtly status. Reverse details: pale blue cloud motifs (two examples); central black square pads with golden/colored cloud edges, encased in rose/maroon/green/yellow velvet; two leather grip straps, four iron/steel ring bolts—balancing function and ornament.

6.4.2. Plain Lacquer Shields

Plain lacquer-coated organic shields (hide, papier-mâché, wood) with natural resin solution, polished to a glossy finish. Often preparatory for painting/gilding, standalone black/red/deep brown lacquer lent a dignified ceremonial appearance while sealing against humidity/wear. Popular among Rajputs, Mughals, Gujarat/Punjab/Bombay warriors (Pant & Sharma 2001). Nine plain lacquer shields include two Silat Dhal from Dhatia, Madhya Pradesh (rhinoceros

hide), plus six stylistically Mughal (North India: Lahore/Peshawar), dated 17th-18th centuries—Indo-Islamic craftsmanship.

Mughal Shields (6 shields, late 17th – early 18th c.): Rhinoceros hide prized for toughness/prestige, rich black lacquer on both sides emphasizes convex form/upturned rims. Smallest (56.159/8) features refined all-over lacquer; larger shows wear from originally elaborate motifs. Metal knobs distinguish: dome-shaped serrated/perforated rims (53.15/99, 56.159/11), riveted/gilded gold, symbolic crescents/stars (53.15/99, 56.159/10-11); plainer circular iron knobs (53.15/102(I), 56.159/9) indicate functionality. Interiors: cotton/yellow velvet padded cushions, leather straps on iron ring bolts—subtle ornamentation. Rajput Shields (3 shields, 17th -18th c.): Rajasthan/Jaipur, rhinoceros hide/leather, black lacquer enhances durability/appeal.

Jaipur (62.791/3): Richly lacquered both sides, koftgari gold damascening on metallic knobs (faded floral motifs)—refined Rajput ceremonial aesthetic. Rajasthan (76.845): Plain leather lacquer surface, utilitarian; six dome knobs, fish-shaped iron plates prioritize structure over decoration. Rajasthan (59.361): Restrained thick rhinoceros hide lacquer, four gold-gilt knobs engraved with elephants—symbolic richness. These shields—from painted narrative masterpieces to functional plain lacquer—demonstrate Rajput/Mughal artisans' mastery of balancing martial utility, material preservation, and courtly symbolism.

6.5. Repoussé Work

Repoussé represents a traditional metalworking technique shaping malleable metals—gold, silver, copper—from the reverse side using hammers and punches over yielding surfaces like pitch, creating raised relief designs on the front. Complementary chasing from the front refines details and enhances depth without material removal, preserving structural integrity. This skilled craft demands mastery of form, metal behaviour, and tool manipulation, producing dimensional surfaces for armour, jewellery, and vessels. Practiced since the Bronze Age across cultures, repoussé reached Renaissance sophistication in ecclesiastical objects, valued for expressive capacity and durability (Horton 1930).

Among surveyed National Museum shields, only two exhibit repoussé ornamentation, demonstrating contrasting styles, craftsmanship, and chronology despite shared technique (Pant & Sharma 2001). The bold repoussé shield from Bikaner, Rajasthan (20th century, 41.5 cm diameter) features a circular-convex form with a high upturned rim and a shallow plate. Central appliqué peacock (beauty/pride emblem) surmounts seated lion flanked by stylized guldasta (bouquet) motifs within prominent floral/creeper patterns—all rendered in bold repoussé. The Devanagari inscription "Sridar Bikaner Chunnilal Jivanmal Dhadeva" suggests a commemorative association. Four metallic bosses sculpted as human heads execute bold repoussé, creating a visually commanding, ornate surface. Reverse fitted with four metallic bolts securing the handle/grip.

Contrastingly, the 18th century buffalo hide shield resembles Mughal rhinoceros-hide specimens—plain, circular, convex with refined decoration. Central gold floral/creeper medallion extends to borders, unified by gilded metallic knobs shaped as reclining tigers with finely serrated rims indicating detailed craftsmanship. Reverse shows damaged red velvet pad,

two leather grip straps, four iron ring bolts; surface damage doesn't obscure original gilded opulence. These divergent examples—one bold/commemorative Bikaner shield, the other refined Mughal-influenced functional elegance—illustrate repoussé's aesthetic versatility across centuries.

6.6. Embossing

Embossing creates raised or recessed relief designs across materials like metals, leather, paper, and textiles by pressing between male (raised) and female (recessed) dies using heat and pressure. Techniques including casting, stamping, carving, moulding, and punching produce dimensional contrast between positive/negative forms. From Middle English "boce" (protrusion), embossing offers rich visual/tactile appeal, evolving from ancient Egyptian carvings and South Indian temple work to modern experimental copper intaglio by artists like Krishna Reddy and P.V. Janakiram (Sahu 2018).

Two 17th -18th century Jaipur, Rajasthan rhinoceros hide shields exemplify leather embossing mastery (Pant & Sharma 2001). The 18th century specimen (47.0 cm diameter), circular-convex with upturned rim and black lacquered surface, features embossed floral/creeper motifs showcasing regional leatherworking expertise. Four metallic knobs, finely engraved with matching floral/creeper designs, bear intricately perforated/serrated edges blending ornamentation and functionality. The 17th century shield (40.5 cm diameter), also circular-convex with incurved edge and black lacquer on both sides, centres on four diamond-cut yellowish synthetic stones set in beautifully carved ivory bases—demonstrating advanced decorative craftsmanship. Obverse displays four *guldasta* (bouquet) motifs surrounding central floral medallion, encircled by a thin creeper border embossed in bold relief.

Reverse includes a square red velvet cushion (one of two leather straps missing), secured by four iron ring bolts. This shield's synthesis of embossing, synthetic stone studding, and ivory settings exemplifies 17th century Rajasthani martial aesthetic sophistication. Both Jaipur shields transform rhinoceros hide—prized for durability—into regal display pieces through embossed motifs that add texture/depth without material removal. The technique's versatility across organic surfaces, combined with metallic/ivory/stone embellishments, underscores Rajasthan's fusion of functional protection with courtly opulence, elevating battlefield equipment into cultural artifacts encoding regional identity and artisanal prestige.

6.7. Engraving & Etching

Engraving in metalwork refers to cutting or incising intricate designs, inscriptions, and patterns into metal surfaces using sharp tools like gravers or burins. In India, this technique has long been revered not only as a decorative craft but also as a medium of cultural, religious, and royal expression, adorning weapons, jewellery, utensils, ritualistic items, and architectural elements (Alexander 2015). Archaeological evidence reveals fine metalwork from ancient times, though engraving reached its zenith during the Mughal period when artisans combined Persian aesthetics with indigenous motifs in gold, silver, and brass. Regions like Bidar, Lucknow, and Kashmir became renowned centres for engraved metal objects, particularly bidriware and koftgari (inlay) techniques. Beyond embellishment, engraving served documentary and devotional purposes—religious texts, mythological scenes, royal decrees, and protective

charms meticulously preserved cultural narratives on copper plates, swords, and ceremonial vessels (Hind 1923; Pant 1982; Lippmann 1996).

Of surveyed specimens, four shields employ engraving as primary surface ornamentation: two Mughal school (North India, Iranian influence), one Udaipur (Mewar) Rajput, and one Delhi Sultanate (steel/Damascus steel; Pant & Sharma 2001). Mughal Shields (41.5-54.4 cm diameters): Circular, convex with upturned rims, crafted from steel, Damascus steel, or unspecified metal. Surfaces feature circular/oblong panels depicting human figures and Arabic inscriptions; borders intersperse floral/creeper designs. Both borders and central areas are engraved and partially gilt with floral, creeper, and geometric motifs; fading gold inlay along rims. Each includes four dome-shaped knobs with serrated/perforated borders, some damascened in gold. Reverse sides vary: one unpadded, others with silk/embroidered velvet linings, square cushions, and four ring bolts. Metallic bosses bear serrated edges and engraved floral patterns. Dated late 16th century (Delhi Sultanate) to 17th century.

Delhi Sultanate Shield (late 15th c., 46.5 cm): Circular-convex, double-shelled body, plain upturned rim, four metallic knobs/ringbolts, no internal padding. Richly engraved circular/oblong panels depict human figures alongside Arabic inscription—intriguing figural imagery within an Islamic context, suggesting secular commission or regional deviation. Incised designs demanded precision on hard metal surfaces. Rajput Shield (Udaipur/Mewar, c.1650 CE, 36.5 cm): Steel, round with upturned rim, overall engraving of shikargah (hunting) scenes, palaces, arms using tah tila encrustation. Central anthropomorphic sun figure, floral/creeper borders. Four dome knobs with perforated/serrated gold-damascened borders. On the reverse: velvet-padded square, four steel rings, dual leather straps. These engraved shields—from Mughal Persianate refinement to Rajput narrative exuberance—encode cultural memory across India's martial heritage.

6.8. Bidri

The Bidri technique, originating from Bidar in present-day Karnataka, employs silver inlay on blackened zinc-copper alloy. Cast base metal is engraved, filled with fine silver wire/sheet, then treated with ammonium chloride solution that blackens the background while leaving silver luminous. Traditionally used on bowls, spittoons, and household items, Bidri rarely appears on arms but graces select National Museum shields and sword hilts. Its stark monochromatic contrast and restrained elegance contrast sharply with multicolored techniques, offering subtle refinement. The late 19th century Hyderabad shield (54 cm diameter) exemplifies Bidri on watered steel. Composed of two circular sheets forming a large shield with an upturned rim, the outer sheet features seventeen cut-out windows: a central seven-petaled flower surrounded by four leaf-shaped windows, outer rim with twelve additional leaf motifs. Spaces between windows are inlaid with gold floral patterns.

The lower watered steel sheet bears Arabic inscriptions in gold inlay—central inscription within square border, others in stylized leaf-shaped borders. All borders (windows, inscriptions, florals) are meticulously gold-inlaid. Four watered steel bosses with serrated rims; bolt heads inlaid as four-petaled gold flowers. Reverse lined with dark pink silk, maroon/green striped silk piping, cross-stitched strap. Excellent condition showcases Deccani Bidri mastery.

6.9. Phari Shields

The Phari shield, described in *Studies in Indian Weapons and Warfare* and classified among the four principal types in *Ain-i-Akbari* (alongside Chirwah, Tilwah, Khera), represents a small, lightweight defensive tool crafted primarily from cane or bamboo. Valued for portability and practicality, it suited bodyguards and lightly armed infantry prioritizing mobility over heavy protection. Bamboo/cane construction emphasized flexibility and cost-effectiveness (priced Rs. 50-4 mohurs), contrasting with elite rhinoceros hide, tortoise shell, or damascened steel shields embellished in gold/silver. Two late 17th century Mughal North India Phari shields demonstrate utilitarian refinement.

First shield (49 cm diameter): Wood/wooden sticks, leather-covered edges (sewn), cloth-lined interior. Crisscross pattern in white/blue; central top leather patch surrounded by four smaller patches. Interior: cotton pad, two fabric strips. Fair condition. Second shield (47.1 cm diameter): Wood/wooden sticks, two leather-covered edges, cotton thread-wrapped body. Bilateral circular blue motifs; round leather central patch. Interior: cotton-filled pad, two handling strips. Fair preservation. These reed/bamboo shields balance visual refinement with battlefield practicality, exemplifying Mughal-era accommodation of diverse martial needs—from royal opulence to accessible infantry protection.

6.10. No Ornamentation

The category of unornamented shields includes two utilitarian specimens: the Maroo Dhaldar from Maharashtra and an incomplete crocodile hide shield from Gujarat. Both prioritize function over decoration. Maroo Dhaldar (early 18th c.): Iron/steel construction reflects Maratha "hit-and-run" warfare tactics. Small, robust design with plain metallic knobs featuring serrated borders for grip/durability. One example integrates offensive bhida chir—two spear-like, pointed blades flanking sides for parry-and-strike versatility. Iron rod interior grip enables swift manoeuvres, embodying martial philosophy favouring practicality over ceremony.

Crocodile Hide Shield (18th c., Gujarat, 54.0 cm): Plain, unfinished/incomplete specimen lacking fittings. Both outer/inner crocodile skin surfaces peeled off; internal padding missing, indicating damage or abandonment. Despite deterioration, represents an elite organic material choice absent decorative embellishment. These austere shields contrast ornate royal counterparts, highlighting diverse martial needs—from Maratha battlefield versatility to potentially ceremonial Gujarat hide work reduced to a functional relic.

6.11. Miscellaneous: Painted

Painting on metal shields fused utility with ornamentation under Persian-Indian imperial patronage, adorning steel/hide surfaces with floral, figural, courtly motifs via lacquer/enamel techniques mirroring miniature painting styles. Resinous/oil-based grounds ensured pigment adhesion, symbolizing royal identity and cultural prestige for functional/ceremonial use (Chandra 1949; Welch 1963). Two painted shields exemplify artistic-martial integration.

Jaipur Shield (Mughal North India, 34.1 cm): Circular-convex steel, black painted with faded gold floral/creeper central medallion/border, concentric circles. Three serrated metallic knobs (one missing); reverse: four iron ring bolts, leather strap, missing pad. Shows rust/damage.

Silat Dhal (Datia, MP, early 18th c., 67.1 cm): Rhinoceros hide painted dark black using goat's blood/reshan silk, four plain circular metallic knobs. Reverse: four iron ring bolts. Good preservation state.

6.12. Enamelling & Studding Techniques

Shield knobs employ sophisticated enamelling (minakari) and studding techniques, transforming functional elements into artistic highlights. Enamelling fuses mineral oxides onto metal via collaborative craftsmanship—chitera (designer), sunar (goldsmith), engraver, minakar (enameller). Designs fired, rapidly cooled, and cleaned with fruit acids yield durable, colorful glazes. Common on Delhi/Jaipur/Sirohi jewelry, martial enamelling produced ceremonial shields with floral/celestial/geometric patterns symbolizing courtly splendor.

Rajasthan shield (Fig. 34, Acc. No. 75.616, late 18th c.): Black lacquered surface with gold-painted floral/creeper motifs; knobs showcase green glass inlay, engraved/enamelled green floral/creeper designs—striking ornamental refinement in late Rajput shield-making. Studding embeds diamonds, rubies, emeralds, and pearls into metal, signifying immense wealth and royal prestige. Primarily ceremonial for processions, gemstones imbued symbolic authority.

Mughal shield (No. 56.159/10, early 18th c. North India): Silver-lined circular knobs with serrated/perforated rims—restrained intricacy. Mughal shield (No. 63.510, late 17th c.): Elaborate knobs inlaid with multiple glass pieces creating a jewel-like effect. These contrasting knob treatments reflect evolving Mughal/Rajput decorative hierarchies from functional elegance to ostentatious opulence.

7. Inscriptions on Indian shields in the National Museum

Inscribed shields from the Indian subcontinent fuse artistic craftsmanship with epigraphical tradition, embedding religious devotion and political symbolism across diverse scripts—Arabic, Devanagari, regional dialects—on surfaces treated with damascening, inlaying, engraving, lacquerware, Bidri, and repoussé. Devanagari Inscriptions: Rajasthani shield (Acc. no. 63.131) borders bear Nārāyaṇa Kavacha verses from Bhāgavata Purāṇa (Skandha VI, Ch. 8) in Devanagari, functioning as talismanic protection. Bikaner/Mewar shields (Acc. no. 79.417/a&b) proclaim "Sri Darbar," denoting royal courts. Maharana Sangram Singh II's lacquered shields (Acc. no. 62.288, 62.2879) name ruler and feudal lords (thikanedars), signifying political hierarchy.

Arabic Inscriptions: Mughal damascened shield (Acc. no. 63.510) reads "Az Sarkar Shah Abbas," suggesting Safavid Persian origin. Delhi Sultanate engraved shield (Acc. no. 76.292) pairs Arabic text with human figures—rare figural-Islamic juxtaposition. Shi'a Nad-i-Ali invocation (Acc. no. 61.676) seeks Hazrat Ali's aid. The Hyderabad Bidri shield (Acc. no. 96.338) features elaborate gold-inlaid Arabic across floral-bordered windows on watered steel.

Regional Syncretism: 18th-century Rajasthan shield (Acc. no. 89.773) blends local dialect Devanagari with animals/humans/mythical figures. Bikaner repoussé shield (Acc. no. 87.491) records "Sridar Bikaner Chunnilal Jivanmal Dhadeva," shifting to patronage signatures. These late medieval-early modern shields transform martial utility into textual performance—

Sanskrit mantras, Arabic invocations, dynastic claims, artisanal marks—revealing cultural plurality, spiritual protection, and socio-political identity across South Asia's martial heritage.

8. Conclusion

Forged through metallurgical fire and borne across martial and courtly domains, the Indian shield (*dhal*) transcends defensive utility to embody sophisticated synthesis of artisanal mastery, martial valour, and cultural semiotics. Grounded in the National Museum, New Delhi's exceptional collection, this study elucidates shields as dynamic repositories of regional aesthetics, technological innovation, and iconographic profundity. Employing systematic typological classification, material analysis, historical contextualisation, and iconographic exegesis, the research interrogates how form, function, and ornamentation articulate broader South Asian martial-visual paradigms. Shields trace evolutionary continuum from prehistoric petroglyphs and *Arthaśāstra* typologies through Mughal apotheosis, adapting to warfare transformations and kingship ideologies.

Morphological spectrum encompasses lightweight Pahri cane bucklers to convex steel/rhinoceros hide exemplars, corroborated by *Dhanurveda*, Sātavāhana iconography, and *Ain-i-Akbari* classifications. Surface treatments—damascening's crystalline lustre, koftgari's auric filigree, lacquered Mewar *shikargah* narratives, Bidri monochromatism, repoussé dimensionality—reveal Indic-Persian-Islamic confluence. Epigraphy constitutes a talismanic palimpsest: Nārāyaṇa Kavacha invocations, "Sri Darbar" courtly assertions, Safavid "Shah Abbas" attestations, Shi'a Nad-i- 'Alī supplications. The museum's sixty-plus specimens facilitate interdisciplinary synthesis of art historical, material cultural, and military historiographical paradigms. Future enquiries beckon regional comparativism, conservation materialities, and digital epigraphic cartographies. The *dhal* persists as a civilisational speculum—interposing aesthetic, technological, and socio-political valences within India's stratified martial inheritance.

REFERENCES

1. Alexander, David G. (2015). *Islamic Arms and Armor in the Metropolitan Museum of Art*. Yale University Press.
2. Arrian. (1976). *The campaigns of Alexander* (A. de Sélincourt, Trans.; J. R. Hamilton, Ed.). Penguin Classics. (Original work written c. 2nd century CE)
3. Chakravarti, P.C. (1941). *The Art of Indian Warfare*. The University of Dacca.
4. Chandra, Moti. (1949). *The Technique of Mughal Painting*. The U.P. Historical Society.
5. Dikshitar, V.R. Ramchandran. (1944). *War in Ancient India*. Macmillan and Co. Limited.
6. Eaton, R. M. (2008). *India's Islamic traditions, 711–1750*. Oxford University Press.
7. Egerton, Hon. W. (1880). *An Illustrated Handbook of Indian Arms*. William H. Allen & Co.
8. Egerton, Hon. W. (1896). *A description of Indian and Oriental armour*. London: W. H. Allen & Co.
9. Elgood, R. (2004). *Arms and armour of India, 1400–1850*. Manohar Publishers & Distributors.

10. Hind, Arthur.M. (1923). *A History of Engraving & Etching*. Houghton Mifflin Company.
11. Horton, L. L. (1930). *Repoussé Metalwork*. The Manual Arts Press.
12. *Indian Handicraft*. (1968). Ministry of Information and Broadcasting, Government of India.
https://ia801901.us.archive.org/21/items/in.ernet.dli.2015.201505/2015.201505.Indian-Handicrafts_text.pdf
13. Irvine, William. (1903). *The Army of the Indian Moghuls: Its Organization and Administration*. Luzac & Co.
14. Koizumi, G. (1925). *Lacquer Work*. Sir Isaac Pitman & Sons.
15. Lippmann, F. (1996). *Engraving and etching* (M. Hardie, Trans.). Charles Scribner's Sons.
16. Pant, G. N. (1970). *Studies in Indian Weapons and Warfare*. India: Army Educational Stores.
17. Pant, G. N. (1978). *Indian Arms and Armour: Human armour and shield*. India: Army Educational Stores.
18. Pant, G. N. (1980). *Indian Arms and Armour: Swords and daggers*. India: Army Educational Stores.
19. Pant, G. N. (1982). *Indian Shield*. India: Army Educational Stores.
20. Pant, G.N., & Sharma, K.K. (2001). *Indian Armours in the National Museum Collection: A Catalogue*. The National Museum.
21. Ray, Purnima. (2003). *Vaisista's Dhanurvedasamhita*. J.P. Publishing House.
22. Sahu, T. K. (2018). Embossment and its significance: Approach to practicing contemporary art. *Chitrolekha Journal on Art and Design*, 2(3).
23. Shamasastri, R. (1915). *Kauṭilīya Arthaśāstra* (English trans.). Bangalore: Government Press.
24. Sinha, B. P. (1965). 600 B.C.–300 A.D. In A. D. Pusalker & R. C. Majumdar (Eds.), *The History and Culture of the Indian People: The Age of the Imperial Unity* (Vol. 2, pp. 644–680). Bharatiya Vidya Bhavan.
25. Stronge, S. (2010). *Painted visions: The Goenka collection of Indian paintings*. Roli Books.
26. Tirri, A. C. (2003). *Islamic weapons: Maghrib to Moghul*. TIRRI Publishers.
27. Welch, Stuart. C. (1963). *The Art of Mughal India*. The Asia Society Inc.