

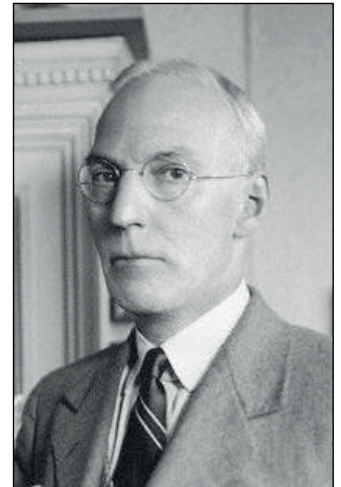


HERALDIC COIN DESIGNS OF GEORGE EDWARD KRUGER-GRAY

by David F. Phillips SHA

with diagrams by Michael S. Schneider

George Edward Kruger-Gray CBE FSA (1880-1943) was one of the most prominent heraldic artists of the 1920s and 30s. He was best known for his designs of British and Commonwealth coins – many will remember the striking shillings and half-crowns of George VI that were among his finest work. This article shows some of his coins and identifies features that contributed to their success as heraldic designs. Endnote references in red contain not only citations but relevant text.



Biographical information about Kruger-Gray is scarce.¹ He was born in London but spent his early childhood in St. Helier, Jersey. He was educated at the Merchant Taylors' School, Great Crosby, at the Bath School of Art and at the Royal College of Art, Kensington Gore, where he was a Royal Exhibition scholar. He graduated from the Ornament and Design course at the Royal College of Art in 1904. He began exhibiting at the Royal Academy of Arts in 1915, and exhibited there 27 times, as well as in other venues.² He added his wife's family name *Gray* to his own name on his marriage in 1918 – confusingly, his name is sometimes given with a hyphen and sometimes without, and his work is sometimes indexed under *Gray* rather than *Kruger*.³

During World War I Kruger-Gray served in the Artists Rifles, and later in the camouflage section of the Royal Engineers where artists were sometimes posted. After the war he practiced widely as an artist and sculptor in many media, including coins, designs for objects such as maces and decorative badges, stained glass, adornment of buildings, and works on paper.⁴ During World War II, despite declining health, he contributed designs for war finance posters and savings stamps. Kruger-Gray was identified with the Arts and Crafts movement and was active in the Art Workers' Guild; he was made a liveryman of the Glaziers' Company in 1936 and given the freedom of the City of London the following year. He died in 1943.

When the Royal Mint Advisory Committee on the Design of Coins, Medals, Seals and Decorations was formed in 1922, to professionalize the design process, it was decided, according to Robert Johnson, Deputy Master of the Mint, to build up

a School of artists who will find it worth their while to specialise in the production of coins and medals, and thereby return to the good old times.⁵

Kruger-Gray must have been an accomplished heraldic designer by then, as he was included in this group because of his expertise in heraldry, and became a "preferred contractor" of the Mint.

The earliest coins I have been able to find attributed to Kruger-Gray are the 1923 South African coinage of George V. Commissions followed for Jersey and Latvia in 1924, British coins and an Australian commemorative florin in 1927, another Latvian commission and one for New Guinea in 1929, Greek and Romanian coins in 1930, and then through the 1930s a series of designs for Britain, Australia, Canada, Cyprus, Fiji, Mauritius, New Guinea, New Zealand, Seychelles, South Africa and Southern Rhodesia. I count nearly 60 coins issued from his designs between 1923 and 1938, including some low values showing only denominations rather than images; some designs were used on more than one coin. In addition he submitted many designs that were not adopted, as well as patterns for Edward VIII's coins



not issued because of the Abdication. In the examples that follow I have drawn on these unrealized designs as well.

His coin designs were almost always for reverses, as he did not do any of the royal portraits on the obverses. These designs fall for our purposes into four general categories. Most interesting from a heraldic point of view are those with shields or crests. Almost as interesting are designs I think of as quasi-heraldic, where charges are displayed in a distinctively heraldic rather than a naturalistic style or posture. Of less interest heraldically are designs featuring patterns or objects in a local idiom – I have largely omitted them from this study. Finally there are designs, mostly of animals, presented in a naturalistic manner – not heraldic, but heraldic artists can learn from the skill and delicacy with which they were composed.

I have taken almost all the coin illustrations that follow from Internet sources, choosing them for clarity, image resolution and lightness of background. Accordingly the dates on the coins pictured are often not the date of first issue, and in some cases may even be from a later reign. The picture captions give the date of issue. Sharp eyes will find the signature KG on almost all his coins. For consistency I call all two-shilling coins *florins*, after British practice, whether or not that term was formally in use for some of the colonies and dominions.



The Southern Rhodesian half-crown of 1932 (left) is one of the best of Kruger-Gray's heraldic coin designs. The arms, granted in 1924, consist of a pick (for mining), and on a chief a lion between two thistles (based on Cecil Rhodes' family arms).⁶ The structure is firmly anchored along vertical and horizontal axes. The vertical axis (the palar line) runs from the finial cross of the crown, embedded in the inscription field, through the crown's frontal cross and the pick handle to a space between letters at the base. The horizontal axis runs along the bottom of the chief through the notches at the extremes of the ribbon holding the royal cypher; it rests on the crossbar of the G on the left part of the royal cypher, and passes between the bowl and the tail of the R on the right.

The honour point at the top of the pick is thus both the visual and the geometric center of the composition.

The cypher ribbon balances the field horizontally (by filling the spaces beside the shield) and vertically (the scrolls at the top and bottom form vertical members parallel to the palar line, exactly halfway to the coin's edge). With the curve connecting the tops of the ornaments on the crown, and the curved base of the shield at the bottom, the rounded sides of the cypher ribbon form an invisible circular setting for the arms.

On the shield itself, note first how the extended points of the leaves make a kind of compartment for the thistles, which in turn mark out a compartment for the lion, so that what might have been a crowded and confusing field is clearly set off in zones. The tops of the thistles directly support the points on which the crown rests. The ends of the pick touch the edges of the shield, and the eye of the pick touches the bottom of the chief – these features, not found in the standard pattern of the arms, fix the pick into its place and echo the curves of the crown's brim and the shield-base. Around the pick, the symmetrical diaper pattern transforms what could have been an awkward vacancy into a visually solid mass.

Kruger-Gray enlarged the alternating crosses and fleurs-de-lys on the diadem of the crown far beyond their normal extent – the fleurs-de-lys even extend past the arch. This heightens their visibility (they are specific iconographic identifiers of the crown of England) and gives the stylized crown a Deco flavor and a special exuberance. As will be seen, he took similar liberties with the crown on many of his other



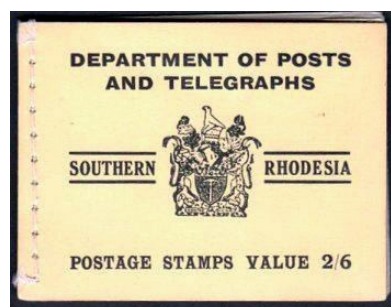
designs. Compare the more traditional but far less visually interesting crown on George William de Saulles' 1911 half-crown, below.



The extension of the finial cross into the inscription space fixes the composition vertically and unites the figure and the inscription, the center and the edge. It also references the tradition, seen on medieval coins and seals, of placing a cross at the start of the inscription. This was a way of showing where the inscription began (useful with the crude lettering of medieval coins), and also of expressing the idea that the source of a



Christian king's authority is beyond himself. Compare, left, a modern rendering of the seal of King Edward the Confessor (reigned 1042-66).⁷ This tradition was followed also in postage stamps of the day (right: a British stamp design from 1937).⁸



Actually the crown was not part of the arms of Southern Rhodesia. The colony's arms carried a crest on a helm like those of any British corporation (see the example at left).⁹ The crest of Southern Rhodesia was the Zimbabwe bird, a relic of a pre-colonial civilization – Kruger-Gray used it as the subject of the shilling in the coinage of 1932 (right).



Coins based on quartered shields are among Kruger-Gray's most successful designs. The first George V shilling was designed for Edward VII in 1902, by Mint chief engraver George William de Saulles (1862-1903), continuing a Victorian tradition of handsome but conservative patterns (the shield was slightly widened for the new reign in 1911).



Left: British half-crown (1911) by George William de Saulles, based on his 1902 pattern.
Center: British half-crown by Kruger-Gray (1927). Right: his redesigned half-crown (1937).

Kruger-Gray radically reshaped the shield in his design first appearing in 1927. Although he used a form from the late 15th and early 16th centuries (see the example below right),¹⁰ his layout was spare and showed a modernizing tendency. This impulse was fulfilled ten years later, in 1937, when he reworked the design for the coinage of George VI. The shape is still Tudor, but the strong firm line and more spacious field show a Deco sensibility. The curve of the side of the shield echoes the curved rim of the



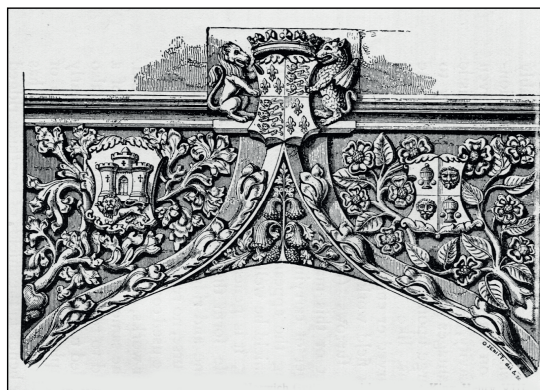
coin. Awkward touches like the cluttered floral emblems in the inscription field, the fussy and absurdly small bouche in the upper left corner of the shield, and the shieldpoint that intruded into the inscription, are all gone. The cyphers are bolder and better proportioned in relation to the field, and

now have modern stylized crowns; the inscription has a cleaner, more modern, almost wholly sans-serif typeface.



Compare the density of the charges in their fields with the pattern of 1911, and note especially how the strings of the reimagined harp form a sturdy mass. Both Kruger-Gray's versions had strong vertical and horizontal geometry, but the 1937 version strengthened the vertical by hanging the shield by its guige from a ring at the top. Hanging a shield by its guige from something (often a tree) is a way of reifying it and reminding us that it is a real object and not just an abstract plane for projecting a heraldic design. See the medieval

example at left (Queen Margaret's seal, 1310).¹¹ The George VI half-crown is a coin many people remember, despite its having been superseded in 1953, more than 65 years ago.



South African florin and half-crown (1923).



The South African florin and half-crown, introduced in 1923 and continued through four reigns until 1960, were similar in concept to the British coins discussed above. They feature the quartered shield of the Union of South Africa, created (along with supporters, crest and motto scroll) for the union of the four South African colonies in 1910. In 1930 Kruger-Gray redrew the arms for the South African government, adding a grassy compartment, and "embellished" them with mantling in 1932. These patterns remained in service until 2000. Left: Kruger-Gray's bookplate for South Africa House, London (1932), showing the Union crest.¹²

The "Lady of Hope" represented the Cape Colony.¹³ The two wildebeests are taken from the seal (1846) and later the flag badge (1870) and arms (1907) of Natal, all of the same design – the blazon describes them as "in full course at random."¹⁴ The wagon is for Transvaal, representing those in which the Boers made their *trek* from Cape Colony



toward a transient independence.¹⁵ The orange tree is of course for the Orange River Colony (formerly Orange Free State), named for the Orange River.¹⁶ The wavy line traces back to the wavy fess on the arms given (but not *granted*) to the Orange Free State in 1855 by King William III of the Netherlands.¹⁷ There it represented the Orange River, but in the Union arms it has the additional effect of locking the quarters in, much as a dovetail might do but more gracefully, and fixing them individually so that each quarter has a unique shape that can fit nowhere else.

As with the later British half-crowns, Kruger-Gray chose for his South African florin an elaborate but narrow-waisted shield shape. This choice was less than optimal, as the height and narrowness of the resulting quarters made it difficult to fill them in a satisfying way with the chunky charges of the blazon. The horizontal axis runs through the center of the numerals in the date; the vertical axis is emphasized by the high relief of the division along the palmar line, ending with the shieldpoint in the inscription zone. The unusual choice not to extend the wavy partition line to the edge of the shield makes it easier to see the four quarters as a unified composition, but the empty spaces within the quarters work against this perception. Note that the scroll terminals in the top half of the shield face outward, but those on the bottom half face backward – this augments the three-dimensional effect of the high relief. This design was retained by the Republic of South Africa on the decimalized 20-cent piece through 1964.

The half-crown was a companion design to the florin. The main difference, apart from the stronger shield shape, is the addition of the crown. As with Southern Rhodesia, the dominion arms carried a helmet and crest, and a crown was not used officially. Nevertheless I assume the South African Government, the Colonial Office and the College of Arms must all have signed off on Kruger-Gray's use of the crown, as well as the Mint Committee which included Sir Frederick Ponsonby representing the King. Research on this point is needed in Mint records.

Typically, Kruger-Gray's crown is highly stylized. The diadem ornaments rise above the arch, and the side crosses are much larger than the frontal cross.¹⁸ The finial cross anchors the design in the inscription field, but the shieldfoot now touches the inscription less gracefully than on the florin. The wavy partition line now reaches the edges. But, perhaps because the addition of the crown made the compartments shorter, the charges now fit them better despite their smaller size, and they have been redrawn for increased clarity. It is a stronger design than the florin, in large measure because the crown provides a clearer overall form than the florin's mannered shield allowed.



The 1933 New Zealand half-crown (left) is a tour de force of heraldic design. Kruger-Gray adds Maori decorative motifs to transform an essentially vertical, rectangular heraldic figure into a round mass that fills the field of the coin. The curve of the (enclosing, invisible) circle runs tangent with the top of the crown arch, leaving only the cross outside. Note that again, in a bold stylization, the fleurs-de-lys



on the crown are extended beyond the arch. The horizontal axis of the composition runs through the center (the noses) of the two faces that fill the role of supporters. It is reminiscent in many ways of the reverse of the golden seal of Henry VIII, from the early 16th century, a masterpiece of Renaissance seal design (right).¹⁹



Left: British shilling (1902), by George William de Saulles. Center left: British shilling (1927). Center right: Pattern for South African shilling (1922, not adopted). Right: Pattern for New Zealand florin (1933, not adopted).

As with his half-crown, Kruger-Gray's 1927 British shilling, one of his most admired coins, is best understood in comparison with the moderately successful but hardly exciting 1902 shilling by George William de Saulles that preceded it. Kruger-Gray's reimagining of the royal crest was not a radical departure. But slight changes yielded a dramatic new look. The crown is redrawn in a crisp modern style. The lion's back and tail are given a slant that seems to wake him up; his head and tail now extend into the inscription zone. The lines separating the legend from the field are removed. The date is moved to the center, where it provides a clearer horizontal axis for the composition, and the ermine lining of the cap now follows the arc of the denomination lettering, leaving the figure securely seated in the field instead of floating unmoored.²⁰

The pattern South African shilling of 1922, based on the crest of 1910, shows a similar animation, and a similar treatment of the tail as an active element in positioning the lion on the field.²¹ The bundle of four staves is emblematic of the binding together of the four colonies that made up the Union of South Africa. Kruger-Gray used these bundles as free-standing charges in other designs – see below. The band around the staves marks the horizontal axis of the coin.

The proposed New Zealand florin of 1933 shows the crest of the original 1911 arms, superseded in 1956.²² The strong vertical orientation and division into three vertical sections recalls the shield of the national arms (seen on the half-crown on page 5 above). The lion holding the British flag is surrounded by curves suggestive of Maori decoration, echoed in the embellishment of the tail. The inner volutes of these curves mark out the space for the crest and guide the eye to see the flag and the lion, which are the same width, as a single column. The small portion of this decoration above the flag, and the downward curve of the torse at the bottom (usually of course a torse curves upward), complete the visual occupation of the circular field.

We turn next to coins featuring crowns and heraldic charges not associated with a shield. The British Crown of 1927 (I will capitalize the coin to distinguish it from the headgear) is a beautifully balanced design. As a diagram will later show, the structure is based on a hexagram anchored on the roses and thistles, and the crown fits exactly within the interior hexagon that figure describes. The crown appears to be set below center, but actually the vertical axis meets the horizontal at the center of the frontal cross. The thistles and roses are connected by a chaplet of shamrocks, an elegant solution to the problem of the three badges, as the shamrocks are made smaller but more numerous than the other badges, less showy but more important structurally.



HERALDIC COIN DESIGNS OF GEORGE EDWARD KRUGER-GRAY (continued)



Left: British Crown (1927). Right: Australian Crown (1937).

As has been seen already in the South African half-crown, and will be seen in other designs as well, Kruger-Gray took exuberant liberties with details of the crown, exaggerating some features and streamlining others in a way that reflected the Deco movement so important in English and European



design in the 1920s and 30s. But as coins were official government issues, his variations always remained basically true to the so-called “Tudor crown” drawn for Edward VII in 1901. This crown was created by the War Office to standardize the pattern for military use, which had been disconcertingly variable in the previous reign. Left is the official War Office Sealed Pattern, on which the fleurs-de-lys are only slightly taller than the crosses.²³ For a genuine Tudor crown,



see the groat of Henry VII by Bruscella (Alexander de Brugsal), right. It looks a lot more like the crown on Kruger-Gray’s South African design than the Sealed Pattern.

The proportions of the crown in Kruger-Gray’s 1922 rendition of the royal arms for use on government documents, right, broadly follow the Sealed Pattern.²⁴ But note the removal of the jeweled frieze from the circlet, the omission of the cap, and the simplification of the arch, which lacks the curve at the top and now starts behind the crosses rather than above them, so the fleurs-de-lys touch its inner rim. By 1927, on the coin, Kruger-Gray further streamlined the arch, now narrowed and inset; the frieze is restored but highly stylized.²⁵



Ten years later, on the Australian Crown coin, the stylization of the crown has progressed much further. The arch is no longer angled, but is a full semi-circle, which if extended would just enclose the bottom corner of the diadem. The fleurs-de-lys have grown exceedingly high relative to the crosses – this helps occupy the space between the arches. The arch itself is lighter, the finial is elongated, and indeed the whole figure now has a distinctly modern quality. The simplicity of the Australian coin, and the absence of any figurative element but a now slender and delicate crown surrounded by *and including* significant open space, give this design a lightness and an almost ethereal grace that makes it one of the most dramatic and effective of all Commonwealth coins.

We turn now to designs featuring free-standing charges (*mobili*, as the Italians say). The Cyprus 45-piastre coin of 1928 (used also for other denominations in 1938) was based on the two lions of the colonial flag badge. This badge was created in 1905 for use on the British High Commissioner’s flag, and was later



(1922) added to British red and blue ensigns for ships registered in Cyprus, to distinguish them from British ships. The two lions refer to the supposed arms of Richard I, who conquered Cyprus in 1191.²⁶



Left: Cyprus 45-piastre piece (1928). Right: New Zealand florin (1933, not adopted).

In contrast to the clumsily composed flag badge (left),²⁷ Kruger-Gray's design is a model of how to fit free-standing charges into a circular field. The figures fill the field evenly in every area, but do not crowd it anywhere. The treatment of legs and tails varies with their position relative to the border of the field. Even away from the border, the lions penetrate into each other's spaces – notice the connection of the upper lion's back paw with the lower lion's tail, how the claws of the two lions' front paws almost touch, and how the lower lion's head extends above the midline (at the top horizontal line of the lower lion's tail) into the upper register. These subtle effects join the two lions into a unified composition.



Kruger-Gray's design for the 1933 New Zealand florin shows the three lymphads from the arms (seen on the half-crown on page 5). The ships are virtually identical, as is appropriate for multiple charges, but their pennants are very subtly different, subliminally individualizing the ships. The horizontal yards echo the hulls below (the horizontal diameter runs along the top of the decks of the upper ships), while the overlapping diagonals of the lines and oars reinforce the pattern. The ships are so close at to seem interlocked, practically fused into one mass. This effect is heightened by a delicate effect in the lines descending from the yard and mast of the middle ship. Although this ship is in *front* of the others, the lines pass *behind* them. Compare the bolder but much less subtle and accomplished version of the same design by Percy Metcalfe, Kruger-Gray's colleague and rival at the Mint (right).²⁸ In the event neither design was chosen, and a naturalistic kiwi bird pattern (by Kruger-Gray) was actually adopted.



Left: Australian sixpence (1940, not adopted). Center: British half-crown for Edward VIII (not issued).
Right: Pattern florin for Edward VIII (not accepted).



The pattern Australian sixpence (above left) was created for a proposed 1941 commemorative issue marking Australia's entrance into World War II.²⁹ It is outstanding in its simplicity, bearing only a sword and the distinctive Southern Cross from the flag. But it conveys clearly the resolve of the Australians in that dangerous year, when Australian forces were already fighting in Europe and Africa. The ability of Kruger-Gray's spare design to do this demonstrates the communicative power of heraldic forms. No commemorative coin was actually issued.

Also very handsome was the pattern British half-crown (above center), designed for Edward VIII but not issued.³⁰ It continues the tendency of the preceding British half-crowns toward increasingly narrow and stylized versions of the royal arms. In this version the arms are reduced to a banner, with a stylish new cypher on each side. Kruger-Gray emphasizes the slenderness of the display field by making the banner somewhat higher than it is wide, an unorthodox proportion for a British heraldic banner. The inclusion of the staff sets the banner itself slightly off center – this barely noticeable effect forces the viewer's attention onto the design. As with the New Zealand florin, Kruger-Gray is again working at a subliminal level. Also shown above right is his unusual and strongly geometric pattern based on the arms of the three kingdoms, proposed for Edward VIII's British florin but not accepted.³¹



Left: British florin, designed by the Mint after an earlier design by de Saulles (1911).
Center left: British florin by Kruger-Gray (1927). Center right: Southern Rhodesia sixpence (1932).
Right: New Zealand threepence (1933).

Like the shilling of the same year, Kruger-Gray's 1927 British florin was a reworking of a design by de Saulles.³² Both have the same structure – an intersection of vertical and horizontal elements with a complementary diagonal structure. But Kruger-Gray's is much better. In both designs the cross of shields dominates visually. But the diagonal sceptres in de Saulles' design are weak, even puny, while Kruger-Gray's are strong enough to balance the cross and anchor the composition. Moving the crowns from the shields to the sceptres equalizes the vertical-horizontal and the diagonal elements, unbalanced in de Saulles' design. The exaggerated side crosses on the crowns lock them into the inscription field. In contrast to the weak centre of de Saulles' design, the curved projections at the midpoints of the sceptres on the later coin give the impression of a disk behind the shields, solidifying the cross and irresistibly unifying the entire composition.

The crossed local weapons on the Southern Rhodesia sixpence of 1937 are powerful in a different way. Here the strength of the design lies not in its geometric composition but in the boldness and simplicity of the figures, set against an open field. Note the slight difference in the decoration at the base of the axe-handles – this variance of detail reinforces their objective reality and saves them from being a merely idealized design, as crossed swords for example tend to be in traditional heraldry. Kruger-Gray used the same method with identically shaped but visually distinguishable Maori weapons on the New Zealand threepence coin of 1933.



Left and center: New Guinea penny and halfpenny (1929). Right: Papuan dog-tooth necklace.

The New Guinea penny of 1929 combined crossed maces (traditional emblems of royal authority in the British system) with a necklace of dogs' teeth, a local form of money. Also shown is a halfpenny with a related design and a smaller necklace. Note on both coins the space-occupying and visually unifying function of the elaboration of the ends of the necklace strings. The hole in the center of the coin, required by the Mint, recognized the local practice of stringing coins on cords and necklaces. Similar coins were issued in Africa, Fiji and Hong Kong.



Left, Southern Rhodesia threepence (1932).

Right: Pattern South Africa threepence (1922, not adopted).

In some of Kruger-Gray's best heraldic coins the principal charges illustrate the denomination of the coin. My favorite among these is the Southern Rhodesia threepence of 1932, the coin that first inspired me to write about his designs. I admire its strength and simplicity, its openness of field and the vigorous but reserved way it communicates its message of threeness (many of its users would have been illiterate). Although spears are not among the heraldic attributes of the colony, it is fair to regard the design as heraldic because of the way they are arrayed (parallel, 2-1) and because they are identical. Well, not *quite* identical – as with the other examples mentioned, sly Kruger-Gray varied the pattern on the sockets to give the spears a flavor of reality along with their stylized presentation. That the diagonal twists on the sockets all run in the same direction serves the same function by denying, in this tiny and scarcely noticeable detail, the mirror symmetry the design otherwise exhibits.

Another successful denomination-based design was the proposed South African threepence of 1922, with three bundles of staves (taken from the crest) below the lion's head (also from the crest). A different and less successful bundle-based design by Kruger-Gray was actually adopted in 1925, with three bundles of staves surrounding a floral emblem (the protea flower) for the threepence and six bundles for the sixpence. It stayed in use until decimalization by the Republic in 1960, and even then the design was adapted for a five-cent coin, with five bundles.



Left: British threepence and sixpence coins (1927).

Right: Threepence and sixpence coins prepared for Edward VIII in 1936, but not issued.

Especially in lower values, repeating a motif with variations by denomination is a familiar technique in coin design. Kruger-Gray's 1927 British three- and sixpence coins do this with confident technique with sprigs of oak, each with a leaf and an acorn, three for threepence and six for sixpence. Both coins are based on an inscribed hexagon, within which ever-smaller triangles are inset until we reach the small triangle at the very center of each design. Note the outward visual progression from that triangle to branches, then leaves, and then the acorns in the inscription field. The apices of the triangles are on the acorns, so the hexagon for the threepence is upright and for the sixpence is rotated a half turn.



More dramatic is a similar set Kruger-Gray designed for Edward VIII (of course not issued) showing three and six rings interlaced.³³ The three rings are Borromean rings – it will be seen that if any one ring is removed, the other two will be freed also. This design was popular in Renaissance Italy as a symbol of the Trinity and later of a triple military alliance. Cosimo de' Medici used them for a badge. Left: a version from the Rucellai Chapel in the church of San



Pancrazio, Florence, designed by Leon Battista Alberti and completed in 1467.³⁴ Right: A threepence trial piece by Eric Gill, based on the cross-and-pellet design of medieval English coins.³⁵ Although not by Kruger-Gray, it is included to show how stark and spare designs showing denomination can be.



Left: Mauritius half-rupee (1934). Center: Two proposed designs for a South African penny (1922).

Right: Canadian cent (1937).

Finally I include a few coins that are not heraldic, to give a more complete picture of Kruger-Gray's numismatic art and accomplishment. Typical of these is the Mauritius half-rupee, where a red deer is rendered naturalistically, but in a posture quite suitable for heraldic use if Mauritius had a deer in its



colonial symbolism. The same is true of the reguardant bull in his proposed South African penny, and especially of the caboshed bull's head in another penny proposal in the same series. Note in all three designs how the animals' horns extend into the inscription zone, and in the South African examples how they extend even beyond it to touch the rim. Finally there is the Canadian cent of 1937, wildly popular at the time and still in production 80 years later. Notice the strict visual balance of this design – the horizontal diameter of the coin passes through the base (where the stem joins) and the extreme outer point of the left leaf, and just above and parallel to these same parts on the right leaf. The bud between the two leaves may be thought to symbolize the future promise of Canada.

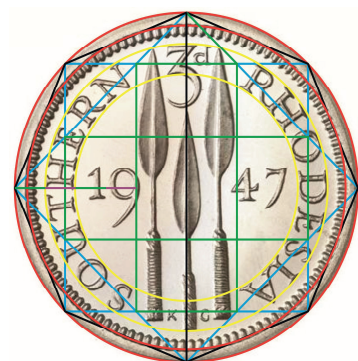
The success of Kruger-Gray's designs are due in part to his highly developed heraldic taste, and in part to his exceptional skill as an artist and draftsman, shown also in his non-heraldic works. But important too is his use of a geometric framework for his designs, which gives them a balance and a stability that could not have been achieved by freehand methods. This geometric structure underlies a lot of heraldic art, beginning with the convention that a heraldic composition develops symmetrically from the palar line.

I asked Michael S. Schneider, a distinguished scholar of philosophical geometry, to analyze the geometrical properties of some of the coins in this article. The diagrams that follow are presented here with his kind permission.³⁶ They show, first, that Kruger-Gray began his designs at the rim (as a circular frame was a given for a coin), and then inscribed a figure within it (usually a hexagon or an octagon, but sometimes a square or other regular polygon). Proceeding from that figure, he generated interior figures (for example, a hexagram by connecting the angles of a hexagon) and derived further figures from those by drawing lines connecting points of contact, and circles tangent to their angles or interior faces. For instance, a circle within an inscribed hexagon provides a guideline for an inscription; the bottom line of an octagon can be used to define an exergue (a coin's bottom compartment, often used for a date).



As an example, connecting the points on the rim marked by the six floral badges on the 1935 British Crown piece (left) yields a hexagram; the inner hexagon this figure defines limits exactly the extent of the crown and the placement of the chaplet of shamrocks.³⁷

Many of Kruger-Gray's coin designs begin with an octagon. This figure is easily generated. A circle starts with a compass-point on a line, and then the resulting horizontal diameter is bisected with a compass to form a vertical



diameter perpendicular to it, and then the right angles this perpendicular creates are themselves bisected with a compass. The resulting diagonals are connected to form a square – here it neatly marks off all the structural elements of the 1927 British florin (right), and also generates the circle that defines the inscription field.



Even where the design occupies only a portion of the coin, Kruger-Gray sometimes uses the inner lines of an inscribed polygon to establish his proportions. The placement of the spear points on the Rhodesian threepence (left), so beautifully balanced, turns out not to have been made with his eye alone, but with a ruler and a compass. Finally, below, Schneider reveals an unusual heptagram-based design, generated from seven equally-spaced points on the rim. It is remarkable how precisely the lines of this heptagram define



the shape of the bull's head and the level of his horns. As in many other designs, the inscription zone is prescribed by the circle in the square within the rim. The horizontal diameter of the coin passes directly over the bull's eyes and rests on the numerals of the date.³⁸



As far as I have been able to learn, Kruger-Gray did not write for publication about his methods. Confirmation of these deductions about their geometrical basis may lie in the papers and correspondence about his designs, to be found in the archives of the Royal Mint.³⁹ As it was not practical for me to explore archival sources, I am left with circumstantial evidence only. "It is true," as Rudolf Wittkower wrote long ago,

that in trying to prove that a system of proportion has been deliberately applied by a painter, a sculptor, or an architect, one is easily misled into finding those ratios which one sets out to find. In the scholar's hand dividers don't revolt.⁴⁰

But as Schneider's diagrams show, the geometry is there, and it is only reasonable to think this is because Kruger-Gray put it there.



Coins were only a part of Kruger-Gray's heraldic output. Over a period from about 1916, the date of the first show I have been able to identify, to 1941 (the date of the "Fiery Cross" war finance poster),⁴¹ he produced hundreds of works. Not all of them were heraldic, but as noted his heraldic production included items in metal and enamel, on paper and in stained glass (left: arms of the Glaziers' Company, 1936),⁴² architectural interiors, commemorative plaques, public and corporate seals (including the great seal of King



George VI),⁴³ posters, bookplates, badges and insignia (right: the Knight Bachelor badge, 1926) and works in other media.

The scale of his output can be estimated from the catalogues of his exhibitions. For example, the catalogue of the 1926 Arts & Crafts Exhibition Society includes for him a heraldic plate, a diocesan seal and coats of arms for two more seals (for the Colonial Secretary and the colony of Southern Rhodesia), three windows, two panels, two shields and a roundel in stained glass, two stained glass cartoons (preparatory drawings for execution in glass), a glazed plaque, designs for a war memorial, a memorial tablet, and silver maces for the Ulster Parliament.⁴⁴ His work is listed without illustration in many exhibition catalogues, and no doubt many of his heraldic designs, for example advertising posters and bookplates, were never formally exhibited. It would be a very useful task (for other hands than mine) to trace the work of this superbly accomplished heraldic artist and make a *catalogue raisonné*, with at least a representative selection of pictures, so it can be seen as a whole and understood, and allowed to serve as an influence and example for the present generation of heraldic designers and artists. ♦



David F. Phillips SHA is a heraldic scholar based in San Francisco. Trained as a lawyer and librarian, he is the author of *Emblems of the Indian States* (2011) and *The Double Eagle* (2014). Links to his published articles on heraldic topics can be found on his website www.radbash.com/heraldry. Phillips is a Trustee of the Flag Heritage Foundation and Editor of its Publication Series.

NOTES

- ¹ I base this review of his life principally on his obituary in the [London] *Times*, published May 4, 1943, and on John A. Kromas, "George Edward Kruger-Gray," *Canadian Numismatic Journal* 10:137-144 (1965). Kromas was able to interview Kruger-Gray's son Stephen and others who knew him. Also useful was Kruger-Gray's entry in the University of Glasgow's online database *Mapping the Practice and Profession of Sculpture in Britain and Ireland 1851-1951*, at <http://tinyurl.com/KGmapping>, archived at <https://perma.cc/3y7d-af52>.
- ² His entries in the Royal Academy and other exhibitions are noted but usually not illustrated in their catalogues.
- ³ I follow the usage in his obituary in the *Times*.
- ⁴ Heraldry aficionados may be interested to see his portrait of Oswald Barron in John Campbell-Kease, "Oswald Barron FSA," *The Coat of Arms* 14:59 (New Series, No. 194, Summer 2001).
- ⁵ Kevin Clancy, ed., *Designing Change: The Art of Coin Design* (Pontyclun [Wales], 2008), 40.
- ⁶ These were *Argent, within two bendlets a lion passant gules between two thistles stalked and leaved proper*. Rhodes died in 1902; the arms were granted to his brother Arthur in 1913 "for himself and the other descendants of his late father." Anthony Wagner, *Historic Heraldry of Britain* (London, 1939), 101.
- ⁷ Image from Wikimedia Commons, <http://tinyurl.com/confseal>, archived at <https://perma.cc/9adh-rvgh>. A very similar illustration appears in J. Harvey Bloom, *English Seals* (London, 1906), 19. I have not independently confirmed the authenticity of this representation of King Edward's seal, as it is offered only to show the common placement of the cross in medieval seals and coins.
- ⁸ Portrait by Edmund Dulac, frame by Eric Gill.
- ⁹ Image from the website of Deverell/Macgregor, specialist stamp dealers, at <http://tinyurl.com/rhodbook>, archived at <https://perma.cc/jj2r-spfb>.
- ¹⁰ Detail of the Bassingham Gate, with the arms of Henry VIII, the City of Norwich, and the Goldsmiths' Company, now in Norwich Town Hall. Engraving by Orlando Jewitt, from W. H. St. John Hope, *Heraldry for Craftsmen and Designers* (London, 1929), 71.
- ¹¹ Image from J. P. Brooke-Little, *Boutell's Heraldry* (London, 1973), 130.
- ¹² Frederick G. Brownell, *National and Provincial Symbols and Flora and Fauna Emblems of the Republic of South Africa* (Johannesburg, 1993), 19.
- ¹³ Named for the Cape of Good Hope. The lady holds an anchor as her attribute. "Hope we have as an anchor of the soul." Hebrews 6:19.
- ¹⁴ Brownell (1993), 53.
- ¹⁵ There is a controversy about whether the half-covered transport wagon shown in the Union arms is the right one for commemorating the trek. See Frederick Brownell, "Trek or Transport? The Wagon in the South African National Arms," *ARMA* (Johannesburg, 1990), 2063-64 and J. D. Bodel, "Trek or Transport: A Rider," *id.* at 2065-66. It appears not to be – the trek was made in fully-covered wagons of the type shown in the arms of the independent Transvaal Republic. But after this type of wagon went out of use in Travsvaal, the half-covered



transport wagon appeared on the Transvaal Colony seal of Edward VII, and thereafter under British suzerainty until the old republican arms were restored for the province in 1951. See Brownell (1993), 70-76. Bodel quotes a letter from Kruger-Gray where he called the device a "Cape cart," which does not help. Thanks to Ralf Hartemink for supplying copies of these two articles.

- ¹⁶ The river was named for the Dutch royal house, itself named for a small lordship in what is now the south of France, once held by the House of Nassau.
- ¹⁷ *Argent, a fess wavy orange between three bugle-horns azure.* The history of these arms, never actually used, is given in Cornelis Pama, *Lions and Virgins* (Cape Town, 1965), 62-67, and figures 65 and 72.
- ¹⁸ The *diadem* is the lower portion of an arched crown. It is usually formed of a projecting *brim* at its base, a *circlet*, often adorned with a *frieze* of jewels, and an *entablature*, including *ornaments* such as crosses, leaves, lobes, fleurs-de-lys, pearls, etc., and the *projections* for attaching them to the circlet. The *arch* (often bearing pearls or other decorations) is an open structure rising from the diadem, sometimes filled with a *cap* of rich cloth. In British crowns the arch is surmounted by an *orb*, topped by a cross *finial*. A *frontal* element on a crown is aligned with the center of the forehead. This nomenclature is nowhere standardized, but it is time it were.
- ¹⁹ Image from the British MagnoliaBox website at <http://tinyurl.com/Henry8seal>, archived at <https://perma.cc/5dkv-k3wf>, where prints are offered for sale. The image is attributed there to *L'Univers Illustré* (Paris, 1868); the original is said to have been affixed to the Treaty of Alliance with France in 1527.
- ²⁰ The numismatic writer H. W. A. Linecar regarded these very changes as defects rather than improvements.

When this rather pleasing motif [the royal crest] was modernised by Kruger Gray on the Shilling it lost its appeal. The de Saulles design was in a way more complete, perhaps only because it was contained within a circle formed by two joined arcs. As good as Kruger Gray's design may have been, it was not so confined and looked too big for the size of the coin.

British Coin Designs and Designers (London, 1977), 127. The circle is of course still there, formed by the surrounding inscription.
- ²¹ For images of Kruger-Gray's unadopted 1922 South African coin designs, see a detailed CoinForum post at <http://tinyurl.com/SouthAfricaKG>, archived at <https://perma.cc/eh4y-7uL3>. An index to a series of such posts about Kruger-Gray's unadopted Commonwealth coin designs can be found at <http://tinyurl.com/KGnotadopted>.
- ²² A modern vector rendition of the first New Zealand arms (1911-1956) can be seen on Wikimedia at <http://tinyurl.com/oldNZarms>, archived at <https://perma.cc/b6a2-k6q9>. For a less impersonal (although unsigned) line drawing (by Graham Johnston?), see Arthur Charles Fox-Davies, *The Book of Public Arms* (Edinburgh, 1915), 547. For images of Kruger-Gray's unadopted 1933 New Zealand coin designs, see a detailed CoinForum post at <http://tinyurl.com/NewZealandKG>, archived at <https://perma.cc/4vwr-zqy8>.
- ²³ Image from Arthur Charles Fox-Davies, *A Complete Guide to Heraldry* (London, 1909; modern reprint New York, 1978), 359 (Figure 642). Fox-Davies says that "the opportunity afforded by the issue of a War Office Sealed Pattern of the Royal Crown and Cypher for use in the army was taken advantage of to notify his Majesty's pleasure, that for official purposes the Royal Crown should be as shown." *Id.*
- ²⁴ Plate 10 from the *Report of the Committee appointed to Select the Best Faces of Type and Modes of Display for Government Printing* (HMSO, 1922). Image from Charles Hasler, *The Royal Arms* (London, 1980), 276 (Figure 580, No. 1).
- ²⁵ Notice that in the 1922 design, the cross on the lion's crown stands outside the frame. The jug near the unicorn's hoof is Kruger-Gray's graphic signature (German *Krug*).
- ²⁶ My source for this information is the Colonial Cyprus page of the *Flags of the World* website, found at <http://tinyurl.com/FOTW-Cyprus> and archived at <https://perma.cc/2ykf-Lt9q>. Richard held Cyprus only very briefly. He sold it to the Knights Templar the following year, 1192, and the Knights sold it that same year to Guy de Lusignan, whose dynasty remained in power in Cyprus until 1489. The rampant lion arms of Lusignan appeared on the British public seal for Cyprus, and on the coinage of 1901. But Churchill, Colonial Secretary at the time the flag badge was adopted, decided on the two lions as having been the choice of King Edward VII in 1905. *Ibid.* Actually there is no evidence that Richard I ever used a shield with two passant lions (see, e.g., J. H. & R. V. Pinches, *The Royal Heraldry of England* (London, 1974), 23-26), or that they were even the arms of Normandy



at this early time (see N. V. L. Rybot, "The Arms of England and the Leopards of Normandy," *The Coat of Arms* 6:160 (No. 44, October 1960)).

- ²⁷ Image from *Flags, Badges & Arms of His Majesty's Dominions Beyond the Seas and of Territories under His Majesty's Protection: Part I – Flags and Badges* (HMSO, 1932), 22.
- ²⁸ Image from the same CoinForum post cited in note 22.
- ²⁹ Kruger-Gray's various designs for this proposed coin can be seen on a detailed CoinForum post at <http://tinyurl.com/KGAust40>, archived at <https://perma.cc/3yv3-xqfu>.
- ³⁰ But "had the Abdication been delayed by a matter of only two or three weeks coins ... of King Edward VIII would have been ready for issue..." Graham Dyer, *The Proposed Coinage of Edward VIII* (HMSO, 1973), 1. Coins prepared for Edward VIII can be also seen on the website of the Royal Mint Museum, from the index page at <http://tinyurl.com/Edward8KG>.
- ³¹ Dyer, 12. On the same page Dyer shows one of Kruger-Gray's designs for a half-crown, placing the royal arms on a cross with doves, a reference to the attributed arms of Edward the Confessor, the King's name-saint.
- ³² De Saulles did not actually design the 1911 shilling, as he died in 1903. But the Mint adapted his very similar design for a florin in 1887, which in turn built on like designs going back to Stuart times.
- ³³ "Here the artist had shown St. Edward's ring, taking it as the emblem of St. Edward the Confessor, the King's name saint..." Dyer, 10.
- ³⁴ Image from Wikimedia Commons, at <http://tinyurl.com/borrorings>, archived at <https://perma.cc/6n7c-vh6m>.
- ³⁵ Image from Clancy, 87. Other trial coins from this series by Gill appear at 86-87.
- ³⁶ Michael S. Schneider's books of exploration and instruction in philosophical geometry can be found through his website at www.constructingtheuniverse.com.
- ³⁷ I made this diagram following Schneider's method, using only a ruler and compass. The others are by Schneider. It is not difficult to bisect a line or an angle, inscribe a hexagon in a circle, and perform many other geometric operations using only those two instruments.
- ³⁸ These diagrams are just examples. All of Schneider's diagrams of Kruger-Gray's coinage are instructive and revealing – I regret that space did not allow including more of them.
- ³⁹ Or even in lines and compass points on the original sketches and drawings. Some of this material is may be held in the National Archives at Kew.
- ⁴⁰ *Architectural Principles in the Age of Humanism* (London, 1949).
- ⁴¹ For an image see <http://tinyurl.com/fierycross>, archived at <https://perma.cc/hx64-perh>.
- ⁴² The roundel, prepared in 1936 for the Merchant Taylors' Hall, is illustrated from a catalogue page from Sworders Fine Art Auctioneers, which sold it on September 15, 2015. For an illustrated article, see <http://tinyurl.com/GKglaziers>, archived at <https://perma.cc/747L-bvv3>. The charges on the shield are grozing irons and closing nails, both instruments of the trade. See John Bromley & Heather Child, *The Armorial Bearings of the Guilds of London* (London, 1960), 116. Grozing irons are used to break off fragments of glass while shaping curves; closing nails hold pieces of glass during leading. For Heather Child's brilliantly clear drawings of these tools, see *id.*, 118.
- ⁴³ For an image of this dramatic seal, see <http://tinyurl.com/G6greatseal>, archived at <https://perma.cc/5kyu-88a3>.
- ⁴⁴ See *Arts & Crafts Exhibition Society: Catalogue of the Thirteenth Exhibition* (London, 1926), on the Victoria & Albert Museum archive website at <http://tinyurl.com/1926exhibition>, archived at <https://perma.cc/qty3-meth>.