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The South African Journal of Science: A biography

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This article provides a chronological account of the *South African Journal of Science* (SAJS) from its inception in 1903 up to the present. This approach clarifies the shifts in emphasis and purpose as the Journal moved through changing publishing structures. Over the course of a century, the SAJS evolved from a publication that included both lay and professional contributions into a formal professionalised scholarly journal while retaining its accessibility. Originally appearing as the *Report of the South African Association for the Advancement of Science* (S₂A₃), for many decades the content presented the work of people with scientific interests, as reflected at the Annual Meetings of the S₂A₃ convened at various locations around southern Africa. Its objective was to serve as a means of communication between scientific workers in all fields and at different levels and not to restrict itself to publishing erudite original findings alone. A further aim was to communicate interesting evidence-based knowledge to the general public, thereby linking science to broader society. From those beginnings, the article traces the numerous changes in format, regularity, quality and financing over a century. As science and scientists became more formalised in South Africa, editorial disciplines were introduced, and higher quality contributions were solicited. Financial considerations thrust the Journal under different publishing umbrellas. Authors became more professional and disciplined in their publications. This article chronicles the development of the SAJS into the open-access scholarly multidisciplinary journal it is today.

Significance:

This work contributes to the history of scientific publishing and scientific institutional history in South Africa. Previous literature in the field of the history of science has made use of contributions to academic journals as sources, but this article on the *South African Journal of Science* shifts attention to the publication itself to focus on South Africa's most important multidisciplinary journal. Its partnership with *Nature* is significant and not generally known. Moreover, this article creates opportunities for further research within the field of colonial and imperial science, nationalism, professionalisation, and links between South African scholarly journals and those published elsewhere.

Introduction

In 1903, the South African Association for the Advancement of Science (S₂A₃, or Association) began publishing the *Report of the South African Association for the Advancement of Science* (*Report*). It was later to be renamed the *South African Journal of Science* (SAJS or the Journal). The Journal was conceived to coordinate science and scientists – in any branch of knowledge – as a new era began in southern Africa with Britain in control of the overall region after the defeat of the two Boer republics in the South African War (1899–1902). Its aim was to serve a specific local community and disseminate the breadth of scientific findings through Annual Meetings that were followed by a regular serial publication. With Volume 16 (1920), the title was altered to *The South African Journal of Science comprising the Report of the Annual Meeting of the South African Association for the Advancement of Science*. This title persisted, at times with a slightly changed word order, or with the meeting venue being noted in the subtitle. The subtitle was dropped in later decades. The Journal became bilingual – English and Afrikaans – in the 1920s but reverted to English in recent years.

At the time of the Journal's first appearance, communication between scientists was not easy. Debates via correspondence took time, travel was difficult, but even more importantly, there were no universities in southern Africa through which camaraderie could develop by way, for example, of annual symposia and conferences. The University of the Cape of Good Hope had been established in Cape Town in 1873, solely as a local examining body modelled on the University of London. A number of constituent colonial colleges provided tuition, but they were uneven in staff qualifications, disciplines taught, facilities, student numbers, and standards of teaching and learning.^{1,2} Pre-eminent among them was the South African College in Cape Town.³

Although the life of the SAJS has been intertwined with those of the S₂A₃ and the Academy of Science of South Africa (ASSAf), it is not the purpose here to explore the paths of either of those institutions in detail nor to chronicle their activities beyond publication of the Journal. Those stories have been told elsewhere.^{4–10} Concentrating specifically on the long life of the SAJS, however, provides an opportunity to analyse a little studied aspect of the history of science in South Africa, namely that of serial publications such as scholarly journals. Hard copy issues of the SAJS are held in numerous university and other formal repositories and are to be found bound together appropriately, but not identically, in volumes by those institutions over the years. Many issues of the Journal, but not all, have been digitised and are available freely online. There have been semi-regular composite indexes to the Journal of which that by Isaac Isaacson ([1914]–1974), Librarian and Archivist at the University of the Witwatersrand (Wits) for 44 years¹¹, published in 1959, is the most useful¹². Every issue of the Journal contained a detailed index of authors and topics. While the SAJS was owned and published by the S₂A₃, the records do not disentangle the two and there is no separate archive relating specifically to the Journal. It is therefore the contents of the Journal that provide the core of the reference material that informs this article, together with the secondary literature that is cited. Although still in existence, the Association has lost its stature and popularity in recent years⁹ and, as often is the

case with voluntary organisations, many of the records were scattered with the changes in committee membership and office-bearers. At some time in the past, however, according to Cornelis Plug in an email to the author (3 December 2023), a few of the records of the Association were donated to the Historical Papers Research Archive at Wits. These have been consulted.¹³ Many of the public records and reports of ASSAf, the current owner and publisher of the Journal, are freely available online through the ASSAf website, but confidential documents are not available in a formal archival repository.

The history of science is of growing professional interest to historians of South Africa. While some of the literature makes use of periodicals as source material, it has not yet treated scholarly publications as scientific institutions in their own right or as worthy of record. This theme is growing in importance. Harvard historian Melinda Baldwin's *Making "Nature": The History of a Scientific Journal*, which inspired the present article, is well worth noting because of *Nature's* influence on the SAJS, and also as an example of the scholarly literature within which this article is framed.¹⁴ As summarised by Sverker Sörlin, with financial backing from Macmillan – a family publishing firm established in 1843 – *Nature* entered the market in 1869 when many predecessors had failed. Only after many decades did it publish what might be termed 'serious' science. *Nature's* story, like that of the SAJS, chronicles "a birth, a childhood ... crises, revolts and reforms, it matures ... becomes respected, even admired"¹⁵. The longevity and multidisciplinary nature of the SAJS provides an excellent illustration of how one particular journal has evolved since 1903, within a specific historical context, and weathered financial and editorial difficulties until its current nesting within ASSAf.

The existence of scholarly periodicals, in the formats and with the characteristics we observe today – including original research, regular appearance, rigorous editorial supervision, anonymous peer review, references and sources, ethical constraints, citations and other metrics – is often taken for granted. Perhaps it may even be assumed that this structure and format are of long standing, fixed over the years. This is not so. As Alex Csiszar, Harvard historian of scientific communication, has laid out, the academic journal with which we are now familiar was created from a plethora of various publications, formats, and ideas that coalesced only in the 19th century. Over the course of the 20th century, they have not only increased exponentially in number, but have become standardised and, in today's world, they are also required to be economically viable, even profitable.^{16(p.1)}

Another study that informs the present article is that by Fyfe et al., in which the authors explain that scholarly journals now offer "organising principles of an entire system of free enquiry ... define and police disciplinary communities ... provide a structure for scholarly careers and the allocation of scientific prestige," but they emphasise that this is what they have become, not what they have always been.¹⁷

Csiszar has also observed, and this seems to be exemplified in the function of the S_2A_3 's Journal, that a key concept of scientific literature, distinguishing it from myth and hearsay, was that it "embodied a powerful image of the collective knowledge of experts and of the orderly progress of knowledge"^{16(p.242)}.

The SAJS began as a colonial publication with intentions both to highlight knowledge in the southern African colonies and also to expand the reach and impact of that knowledge, particularly with the encouragement of local expertise. The words of Sir David Gill (1843–1914), Her/His Majesty's Astronomer at the Royal Observatory in Cape Town from 1879 to 1907 and the first President of the S_2A_3 , are worth recalling. Gill wrote in 1905 that "with the recent importation of men of trained scientific capacity, as Professors in our colleges, or Government experts, and now with a few sons of the soil who have been trained by them, there is evidence of a marked increase in true scientific work, and a hopeful prospect of more"¹⁸.

Scholarly societies in South Africa: 1820–1900

Because the SAJS has been linked to a scholarly organisation over the century, it may be useful to explore this historical background in South Africa. Such institutions and accompanying publications became

features of learned communities as Western science began to move towards what has been referred to as the "new" or "experimental philosophy"^{19(p.4)}.

Notable early examples appeared in Europe in the 1600s, particularly in Britain – where *Philosophical Transactions of the Royal Society of London* was first published in 1665 – as well as in France and what was to become Germany. It was imperial Britain, however, rather than Europe that provided the institutional model for southern Africa when, in the early 1800s, the Cape came under British control and settlers modelled their locally based intellectual institutions on those with which they were familiar in Britain.²⁰ In the 1820s, numerous scientifically and literary-inclined societies were established in the Cape Colony, the structure and foci of which harked back to what the colonists had encountered in Britain. Many of them have been identified and described by Bregman²⁰, Plug^{21,22}, Carruthers²³ and Dubow⁶. But as the 19th century drew to its close, a group of "men of science" with cultural and social authority in Cape Town formed the South African Philosophical Society in 1877. In 1878, they began the *Transactions of the South African Philosophical Society* in order to publish original research.²⁴ This was the first South African journal devoted entirely to what was formally referred to as "science" and its appearance marks a significant development.²⁵ Le Roux has discussed some aspects of the history of the *Transactions of the Royal Society of South Africa*, the successor to the *Transactions of the South African Philosophical Society*, and makes points worth noting.²⁵

Around this time, technical sciences emerged in the southern African subcontinent and grew in intellectual and economic importance. This new thrust did not originate from colonial Cape Town, which had been the centre of cultural life. The mineral revolution – the discovery of diamonds near Kimberley in the 1860s and major gold mines on the Transvaal Witwatersrand in the 1880s – had altered the trajectory of knowledge in southern Africa as well as its economic and political destiny. Settlers from various parts of Europe flocked to the mines, revolutionising life for white and black people alike. The economy beyond the Cape boomed as industrialisation and technological sophistication burst upon southern Africa. With the arrival and settlement of thousands of immigrants, voluntary or semi-professional societies affiliated to many disciplines and interests were established in various towns.^{21,26}

The establishment of the S_2A_3 and the Report

The cataclysm of the South African War brought irrevocable changes to the region. While some institutions had referred to themselves as "South African", as the South African Philosophical Society and others had done, they were almost entirely Cape-based and Cape-focused. Between 1902 and 1910, integration of the then four British colonies was regarded as inevitable, and indeed, the Union of South Africa came into being in 1910. The scientific primacy of the Cape was threatened by intellectuals in the Transvaal, the hub of the mining industry. While eminent Cape scientists were mainly astronomers, botanists, and people in other natural sciences, the applied fields – engineering, metallurgy, or geology – were growing in the industrialising Transvaal.²³

In the expectation of some form of post-war political partnership among the four colonies, moves towards more cohesion in scientific matters were initiated. Perhaps surprisingly, they came from the engineering community. Until 1902, when peace was declared, the South African Philosophical Society in Cape Town was the leading scientific organisation. Thereafter, it began to reorganise itself as the Royal Society of South Africa, culminating in the grant of a Royal Charter in 1908.²³ While the South African Philosophical Society was transforming itself, others were moving forward with different ideas.

Founding a new learned society in 1902 after a devastating war was an act of courage in the years described by Theodore Reunert (1856–1943) as a "time of great and almost universal despondency"^{27(p.141)}. Reunert was a prominent member of the Chemical and Metallurgical Society of South Africa, formed in Johannesburg in 1894.²¹ British-born, he had studied engineering at what is now the University of Leeds and was a talented engineer whose expertise straddled many fields, an entrepreneur

whose company still exists, a man widely published in journals and books, and one keenly interested in technical education.²⁸

The establishment of the S_2A_3 is recounted by Reunert in his unpublished autobiography:

... And that brings me back to the Boer War and the new interests I took up during my enforced residence as a refugee in Cape Town where, meeting for the first time a number of men in my profession who at ordinary times were scattered far and wide, I proposed forming a South African society of engineers and allied professions. The proposal came to the notice of Sir David Gill, His Majesty's Astronomer at the Cape, and he said, 'Why not go a step further and found a society after the pattern of the British Association?' And so he and I having become friends, were the main promoters of the South African Association for the Advancement of Science which held the first meeting in Cape Town in 1902 with Sir David the first President.^{29(p.131)}

At that inaugural meeting in 1902, Gill outlined the objectives of the Association, and the values then elucidated would infuse the Annual Meetings and the published *Report* that followed. The intention of the S_2A_3 was not to be a rival of, or competitor to, academies such as the Royal Society of South Africa, with its strong base in Cape Town, whose *raison d'être* was to publish original research and honour outstanding scientists, nor was it to challenge societies catering to specialised disciplinary fields. Many S_2A_3 Members remained active in other scholarly bodies. The mission of the S_2A_3 was less exclusive, more democratic and collegial, and also more regional in representation and diverse in the scientific fields it embraced as well as the quality of its published output. Unlike an academy, there were no barriers to membership except the payment of a membership fee, no CVs needed to be provided or professional affiliations necessary. Gill summarised its work as "... one of our chief functions is to bring together once a year (now at one centre in South Africa, now at another) not only the working members of the various scientific societies throughout the country, but all who are interested in science either in an active or in a sympathetic sense"³⁰. As well as the Journal, a quarterly Bulletin gave news of Members, branch meetings, and other informal information.

Issues of the Journal reveal that annual gatherings lasted up to a week, were generally held in July each year, and ample time was allocated to field excursions, civic receptions, and social functions (all of which are described in the *Reports*). Meeting in this way created opportunities for nurturing friendships and stimulated a sense of a regional scientific community. Members of the Council and other S_2A_3 elected office-bearers were geographically representative of the subcontinent, while the range of scientists and disciplines was calculated to create a sense of political and scientific inclusivity. Scholars from entirely different areas of interest thus mingled in person, while local people, including the youth, were also involved and welcome to listen to presentations in the different centres in which the meetings were convened. The *Report* was intended not only to convey scientific facts, but to act as a means of communication and of introducing intellectually inclined people to one another.

The SAJS: 1903–1940

The first Annual Meeting of the four Sections of the S_2A_3 , held in Cape Town in 1903, was described in *Nature* as "a British Association gathering in miniature"³¹. The announcement that the illustrious British Association for the Advancement of Science (BAAS, founded 1831) would visit southern Africa two years later energised the new S_2A_3 because it would host a large visiting delegation – 200 people – and parade the scientific opportunities the subcontinent could offer.⁶ The important scientific prospects of southern Africa were reiterated in 1929 in the S_2A_3 Presidential Address of J.H. (Jannie) Hofmeyr (1894–1946) who emphasised its growing "South Africanism" since 1905 as well as its potential for wider "Africanism"^{2,32}. More than a century later, in 2008, the then Editor of the Journal could note the "remarkably rich laboratory for scientific investigations that southern Africa represents", itemising

the natural world, both terrestrial and marine, diseases, the southern skies, the climate and atmosphere and, importantly, the "great diversity of human cultures"³³.

Before the BAAS visit, two Annual Meetings of the Association were convened, the first in Cape Town in 1903, the second in Johannesburg in 1904, and each was followed by a *Report*. Each meeting of the S_2A_3 was divided into Sections describing a suite of related fields of enquiry. There were four Sections in 1903 and their number and arrangement changed over the years. In 1903, 16 papers were presented in Section A (Astronomy, Chemistry, Mathematics, Meteorology, Physics), 11 in Section B (Anthropology and Ethnology, Bacteriology, Botany, Geography, Geology and Mineralogy, Zoology), 8 in Section C (Agriculture, Architecture, Engineering, Geodesy and Surveying, Sanitary Science), and 11 in Section D (Archaeology, Education, Mental Science, Philology, Political Economy, Sociology, Statistics). The first *Report* comprised 46 papers and 556 pages and printing and distribution were onerous tasks.³⁴ At every meeting, the elected President (a different incumbent each year) gave an Address that generally described the state of science, or its potential in the region, while the (also elected) Section President did the same for their disciplinary grouping. The first *Report* was overseen by a Publications Committee of seven people, of whom the Chair and Editor was the Rev. Dr William Flint (1854–1943), Methodist minister and Librarian of Parliament in the Cape Colony.

The process of paper acceptance and publication was outlined in the 1903 S_2A_3 Constitution. In short, papers of suitable length were scrutinised by the various Section Committees at least a fortnight before they were presented at the Annual Meeting. Thereafter, those Committees would hand papers for publication to the General Secretaries to be forwarded to the Council ahead of printing.³⁵

The second Annual Meeting, in 1904, was held in Johannesburg under President Sir Charles Metcalfe (1853–1928), a civil engineer. The *Report* was edited by George S. Corstorphine (1865–1919), at the time the Consulting Geologist to Consolidated Goldfields, and Edmund B. Sargent (1855–1938), then Director of Education in the Transvaal. It, too, resulted in a very large volume with issues appearing monthly and mailed to Members as soon as they appeared in print. The S_2A_3 had no corporate financial backing and thus relied principally on its members' subscriptions to fund the *Report*. The volumes record that governments of the four colonies (later provinces) were regularly approached for additional financial aid, but although this was frequently forthcoming, it was neither reliable nor sufficiently large. Initially, Members of the S_2A_3 paid an entrance fee of £1, then an annual subscription of £1. Reprints from the *Report* were available for a small fee, and the public could purchase a single issue for two shillings from the Association. In 1932, in reporting on the 30th Annual Meeting of the S_2A_3 , held in Durban, editor H.B. Fantham (1876–1937), Professor and Head of the Department of Zoology at Wits, advertised, in *Nature*, the price of Vol. 29 as 30 shillings for those who wished to purchase it.³⁶ Copies were sent to paid-up members and to exchange libraries (see below). In the early 1920s, to save costs, issues were published quarterly rather than monthly, and in 1926 it was decided to publish a single annual volume, although it was also bi-annual for a time. These volumes were all substantial in length, usually between 500 and 700 pages a year.

There were sporadic difficulties in publication. Financial woes beset the Association as early as 1907, when a long Depression followed the South African War. The *Report* was the major expense of the Association, costing the large sum of £422/12/0 in 1906³⁷, and almost doubling to £740 by 1921³⁸. In 1920, for example, the question of raising subscriptions and accepting advertisements was discussed, and it was decided that the incoming council would consider measures to increase revenue to fund the publication. However, there were very few editorial expenses because all official positions in the S_2A_3 and in the production of the Journal were entirely voluntary.

Convening the joint Meeting with the BAAS in 1905, mentioned above, was a huge undertaking for the Council of the S_2A_3 . With Theodore Reunert, the President at the time, the visitors were treated to a tour of the region and celebrated wherever they went. Dubow has argued that the 1905 visit of the BAAS was "intended to confer status on the

newly constituted S_2A_3 ” but it also served to cement relationships among scientists within the budding Union of South Africa as well as with those in Britain.⁶ The enormous *Report* that followed was published in four volumes – *Addresses and Papers read at the Joint Meeting of the British and South African Associations for the Advancement of Science held in South Africa 1905 – Being the seventy-fifth meeting of the British Association and the Third Meeting of the South African Association* – and was edited by H.T. Montague Bell (1873–1949), well-known journalist and compiler of various annual publications. In addition to the four volumes, the S_2A_3 published its own separate *Report*, Volume 3, that combined its third Meeting in Johannesburg in 1905 with the fourth in Kimberley in 1906, under the editorship of Flint.³⁵ Before the BAAS visit in 1905, the S_2A_3 prepared a handbook for the enjoyment and instruction of the visitors to give them an overview of “science” in the region.¹⁸ In 1929, for the second visit of the BAAS, the S_2A_3 – referring to itself as ‘the South African “British Association”’ – prepared a similar volume updating the “progress” of knowledge in the previous two decades.³⁹

In perusing the many volumes of the *SAJS* one discovers that the team of volunteers responsible for the *Report* changed regularly until a formal editorial position was created in the early 1920s, but the role of editor was not, in these years, a prominent or visible one. There were no editorials or editorial opinions; it was the Addresses of the S_2A_3 President and Presidents of Section Committees that were thoughtful and often important.^{2,40} Names of the various editors involved were sometimes, but not always, printed in the *Report*, and in the early years it seems that a local scientist and a selected team dealt with papers emanating from the meeting held in their locality. For example, Corstorphine and Sargent, mentioned above, who edited the Johannesburg Volume of 1904, and Selmar Schonland (1860–1940), Director of the Albany Museum and Professor of Botany at Rhodes University College (founded 1904), edited the *Report* of 1908 that related to the Grahamstown meeting that year together with a Publications Committee of six colleagues.⁴¹

Without interruption during World War I, the Journal records Annual Meetings that took place in many regional centres, so as to be geographically representative, and voluminous *Reports* were subsequently published in serial form. From 1903 to 1910, as the Reports describe, locations included Cape Town (1903) and Johannesburg (1904), while 1905 marked the visit of the BAAS with meetings convened in different centres. Until 1939, the Annual Meetings were held in many towns in the region, not only within the political borders of the Union and often in minor centres. In this regard, in the early years, one might mention Bulawayo (1911), Lourenço Marques (now Maputo) (1913 and 1922), Salisbury (now Harare) (1927), Windhoek (1937) Oudtshoorn (1925), Caledon (1930), Barberton (1933) and Paarl (1935). In 1929, when the BAAS paid another visit to South Africa, the delegates again perambulated around the region.⁶

Leafing through the many volumes of the Journal, it becomes evident that taking a week of the working year of a scientist, whether employed in government, education, or engaged in personal research, was a considerable commitment and personal expense. Many Members of the S_2A_3 seem to have used their vacation leave in order to attend and present their papers. Communication with fellow scientists and the public, who could listen to the papers and also attend the social gatherings, was immediate and personal at these Meetings and was as important as the detailing of discoveries in formal presentations. Moreover, the annual trek from one town to the next (determined a year in advance), involved appointing a voluntary Local Committee responsible for organising the venues, excursions, public lectures, liaisons with mayors and other local dignitaries, all of which are described in the Journal. No doubt, in the dealings of the S_2A_3 with the civic and other local authorities, the importance of science, and of the Meeting itself, was communicated to the different hosting towns and reinforced the importance of science to society. The S_2A_3 Local Committee had a large responsibility in organising the extensive scholarly and local programme, but it was a practical device to engage different places in the shared scientific endeavour through personal interaction. It also provided opportunities for locally significant sciences to be emphasised, such as in towns like Johannesburg in 1904 where the technical sciences predominated and

matters like miner’s phthisis were discussed⁴² or Lourenço Marques (Maputo) in 1913 and 1922 where marine sciences and Portuguese history were central, or Windhoek in 1937, with its focus on geology and desert studies. Thus, the annual location provided something of a theme, ensuring that scientific workers in these places had the opportunity to present and discuss their work, and to take their science directly to very different audiences and publics. And importantly, South African intellectual life was depicted for posterity in the Journal.

One can only admire the amount of work done by the voluntary local organising committees, the enthusiasm and dedication of delegates and the S_2A_3 Members from many disciplines who contributed to the success of the Meetings and to the publication of the Journal thereafter. In addition, the interest of the civic authorities and the public that attended needs to be mentioned and, in connection with the Journal, so does the work of those who did the typing, who were very likely to have been scientists’ wives and female secretaries and who are not acknowledged by name.

The expertise that went into the articles appearing in the early volumes did not bring the professional or financial rewards of scholarly publication, or even act as the marker of individual scientific worth – that would come in later decades. Until 1918, there were no formal South African universities to offer regular opportunities for promotion, and there were no citation and other indexes for academic enhancement, let alone monetary subsidies for publications or recognition from institutions like the National Research Foundation with the system of individual ranking based on publication output.^{43–49} The contents of the Journal were genuine initiatives by scholars and learned people to publicise their field of study, to disseminate findings locally and internationally, and to boost the image of science generally. The separated Section meetings within the larger Meeting, together with plenary sessions, were ideal to avoid what might have been a mere salmagundi of disciplines, combining, as they did, discussion of related studies at certain times during which scholarly debate might be robust, and the plenary sessions which were of more general interest.

Being a scientist in the first half of the 20th century was very different from what it is today, and the distinction between expert and layperson was less clear. Scholars who contributed to the *Transactions of the Royal Society of South Africa* were acknowledged experts, most often elected Fellows, whose work was original and important. By contrast, many contributors to the S_2A_3 Journal would today be considered “citizen scientists” rather than professionals, and it is clear that even many of the more scholarly articles were informed by work done by amateurs. As the indexes demonstrate, contributions to the Journal were wide-ranging in topic and focus, uneven in length and significance, and many were descriptive and would not qualify today as ‘scientific’.¹² There was little regimentation to stifle the eclectic offerings. Published articles did not always have source lists or bibliographies, there were no keywords or abstracts or formal length restrictions. There was also no indication of papers that might have been rejected (if any), although certainly some were not printed owing to costs or perhaps because the authors did not submit timeously.

It is not possible to summarise the contents of these early volumes because they were so extremely varied and straddled all disciplinary fields from archaeology to zoology, but close analysis of a long period of published articles would be academically rewarding. Perusing Presidential Addresses – both of Section Presidents (Sections changed in composition and number) and Presidents of the S_2A_3 – would provide overviews of what might be termed the general state of science.^{2,40,50} It would also be worthwhile to follow a particular suite of disciplines, and tracking the growth or decline of subject fields expressed through the Journal would be worthy of research, as would an examination of what papers in the *SAJS* received international attention or even altered the dimensions or trajectories of a particular science.

As just one example, archaeology can be seen unfolding in new directions through the pages of the *SAJS*. Early issues frequently contained pictures or drawings of stone tools or rock art accompanied by speculation on their origins. But by the late 1980s, the new and exciting field of cognitive

archaeology, promoted principally by J. David Lewis-Williams (b. 1934) at the University of the Witwatersrand (Wits), had been established and become well known.⁵¹ Similar developments might be identified in the evolution of many disciplines over the century.

From the beginnings of the Journal there was considerable curiosity about black South African society and the African past, couched though it was in the patronising, even racist, language of its time. Dubow has highlighted many significant addresses and examined particularly how a white South Africa was constructed through science with the Journal playing a part in the topics and perspectives of many of the articles that were published.⁵² However, as Journal authorship was not pre-determined by skin colour, nor were there racial hurdles to joining the S₂A₃ or participating in the Annual Meetings (such as an elected Fellowship or Membership that might apply in other societies and institutions), more detailed research on this subject would be rewarding.

By far the majority of authors were men, many of distinction. They included, for example, botanist John W. Bews (1884–1938)⁵³, geologist Alexander L. du Toit (1878–1948)⁵⁴, chemist Paul D. Hahn (1849–1916)⁵⁵, educationist Sir Thomas Muir (1844–1934)⁵⁶ and veterinarian Sir Arnold Theiler (1867–1936)⁵⁷. The participation of women was welcomed from the start. Among them were botanist Edith Stephens (1884–1966)⁵⁸, mycologist Elaine Laughton (née Young) (1898–1974)⁵⁹, plant pathologist Ethel Doidge (1887–1965)⁶⁰, parasitologists Annie Porter (1880–1963)⁶¹ and Gertrud Theiler (1897–1986), a Section President in 1934⁶², and anthropologists Dorothea Bleek (1873–1948)⁶³ and Winifred Hoernlé (1885–1960)⁶⁴. Maria Wilman (1867–1957), botanist, geologist, expert on the rock engravings of the northern Cape, and the first Director of the McGregor Museum from 1906 (and the second South African woman to attend the University of Cambridge), was among the early contributors to the Journal.⁶⁵ Wilman provided photographs from the Cronin Collection in the museum – a rock painting, a rock engraving and a glaciated rock surface – to the *Handbook* prepared by the S₂A₃ for the second visit of the BAAS in 1929 referred to earlier.⁶⁶ Glasgow-educated Mabel Palmer (née Atkinson) (1876–1958) was an economic historian, ardent feminist, and promoter of black and Indian education in Natal, whose articles appeared regularly.^{66,67} She was a Section President in 1930 and Vice-President of the S₂A₃ in 1933. There was also Johannesburg-born social activist Hansi Pollak (1905–1982), pioneering social worker at the University of Natal, President of Section F in 1934.⁶⁸ During World War II, Pollak was seconded to the United Nations Refugee Relief Association in the Middle East and, a long-standing member of the Institute of Race Relations, she was director of Welfare Services for the World Council of Churches in the 1950s.⁶⁹ In later years, other women were prominent, an example being the remarkable palaeobotanist Edna Plumstead (1903–1989).⁷⁰ The names of some other authors are equally well known, but condemned for the role they played in South African history. Architect of apartheid Hendrik F. Verwoerd (1901–1966), who contributed an article to the Journal in 1929 when he was Professor in the Department of Applied Psychology at Stellenbosch University, comes to mind in this regard.⁷¹ There were no black people present either on the Journal or within the Association until many years had passed, although there were no institutional impediments to their participation in the Journal or in the S₂A₃. While there were black intellectuals in the late 19th and early 20th century South Africa, the majority were journalists, political activists, and writers. Favoured publishing outlets for this cohort were explored some years ago by Odendaal⁷² and by Mgadla and Volz.⁷³ One can only speculate as to why the S₂A₃ did not attract Western-educated black scholars – such as doctors or veterinarians – or indeed, the educated public, in the years before apartheid when this might have been possible.⁷⁴ Flint's Presidential Address in 1919 expresses views that, while patronising, are not entirely derogatory⁷⁵ while the biographies of some of the prominent Members of the S₂A₃ indicate their liberal political views for the time. One of the objectives of the S₂A₃ was to promote local scientists, and it would perhaps be useful to survey the national origins, educational backgrounds, and careers of authors in the Journal. In reading through the volumes, one certainly gains the impression that, by the 1930s, there were many more locally born scientists than there had been at the start. Familiar South African figures, like ecologist John F.V. Phillips (1899–1988)⁷⁶, archaeologist Clarence Van Riet Lowe (1894–1912)⁷⁷, civil engineer R.J. Van Reenen (1884–1935)⁷⁸, parasitologist Gertrud Theiler, and others appear in later years.

Although one can discover a great deal about the different South African sciences from reading these volumes of the SAJS, it is more difficult to find first-hand accounts of how Annual Meetings and papers were received by participants and subsequently by authors – reception rather than production. No doubt reactions were either verbal at the time or expressed in documents now unavailable. It is for this reason that the recorded response of G. Evelyn Hutchinson (1903–1991) is significant as an instance of one scientist's perspective.

In his later career at Yale University, Hutchinson was a world-renowned ecologist. As a young academic he spent two years (1926–1928) in the Department of Zoology at what was then the new University of the Witwatersrand. While in South Africa, Hutchinson corresponded with his parents in England and his letters are housed at Yale. Although biologists by training, Hutchinson and his wife Grace E. Pickford (1902–1986) became fascinated by San hunter-gatherer culture, and thus were delighted to meet and speak to Dorothea Bleek at the S₂A₃ meeting held in Salisbury (Harare) in 1927. Hutchinson told his parents that the gathering was “a great success, chiefly in meeting people and learning some anthropology. Our section has been very dull; its president [Sydney H. Skaife (1889–1976)] failed to appear, and Dr Annie Porter was installed instead. She has found some excuse to avoid or prohibit a discussion on almost all the papers! Fortunately, people protested, and we had several interesting talks. The most interesting people are undoubtedly the anthropologists...”. A highlight was the “Evening Discourse” given by Alexander L. du Toit on ‘The Kalahari and some of its problems’, which Hutchinson described as “chiefly recent geological history, quite interesting but too long”. There were informal discussions, Hutchinson recording that, “We gave a campfire coffee paper one night to the Hoernlés [Winifred and Alfred (1880–1943)] and a friend who were staying at the hotel.” While in Rhodesia (Zimbabwe), the couple took the opportunity to visit Great Zimbabwe. “It is a most amazing place,” Hutchinson wrote, “but I am now a convert to its Bantu origin in part.”⁷⁹ It was shortly afterwards that renowned British archaeologist Gertrude Caton-Thompson (1888–1985) published definitive evidence that the site was African built.^{80,81} The multidisciplinary and the personal interaction of the Annual Meeting were beneficial to Hutchinson's intellectual growth, and this was doubtless the case for very many who attended. After every Meeting, the widely distributed Journal appeared as a permanent record to which anyone could later refer.

For Percival R. Kirby (1887–1970), Professor of Music at Wits, the SAJS was vital, and in his memoirs he frequently refers to S₂A₃ meetings and to his articles in the Journal.⁸² Kirby's research speciality, ethnomusicology, was extremely innovative for introducing an understanding of African music, its instruments, and its theoretical base into the academy. His work relied heavily on African informants and their expertise. Without Kirby's publications over many years in the Journal, it is unlikely that this field would have prospered. Similar developments can be seen in the evolution of many disciplines over the century.

The Journal was also widely available internationally. It was conventional in that era that societies with serial publications not only mailed printed copies to paid-up members or subscribers but participated in extensive networks. Thus, in exchange for despatching the SAJS to very many libraries and academic societies around the world, thereby promoting the Journal and its contents, the S₂A₃, in turn, amassed an extremely large collection of similar publications that were housed at first in a special room in the Johannesburg Public Library and later in the Association's separated collection at Wits, only to be destroyed by the fire in the Gubbins Library in December 1931.⁸³ In 1920, the Journal recorded its collection as being some 250 journals from all over the world, emanating from institutions to which it had sent copies of the SAJS.⁸⁴ In 1963, the Library boasted 7700 volumes, with 420 titles currently received.⁸⁵ WorldCat lists 1643 libraries holding copies of the SAJS, although the various dates of these collections are not easy to obtain.⁸⁶

The 1917 Constitution of the S₂A₃ provided for an Editor of the *Report* and, in 1919, the first incumbent was eugenicist Harold B. Fantham. At this time, the Headquarters of the Association moved from Cape Town to Johannesburg where Fantham was based in the Department of Zoology at Wits.⁸⁷ While the Editor's role was not specified in detail, one can

surmise that his tasks were those of collating contributions from the various Section Committees and overseeing the printing and despatch, bearing in mind that membership of the S_2A_3 generally hovered around 800, having begun with 69 members in 1901/1902, the number increased to 336 in 1902/1903, although it was admitted that record-keeping was erratic and uncoordinated (and subscriptions were unpaid) and precise figures were difficult to obtain.⁸⁸ It is worth recording that in 1913 there were 263 Members in the Transvaal and 230 in the Cape, 24 abroad, 8 in Basutoland, and 1 each in Swaziland and German South West Africa⁸⁹, but, by 1925, Cape Member numbers had remained static (214 Members) while in the Transvaal they had increased to 501 in a total of 915⁹⁰. In 1963, the numbers remained comparable, with 1053 members in total, 547 in the Transvaal, 261 in the Cape, 113 in Natal, 35 in Southern and Northern Rhodesia, while 61 were listed as being “Overseas”.⁹¹ It was under Fantham’s editorship that the *South African Journal of Science* became the title, with the *Report* as a subtitle. The reasons for making this change were not articulated at that time. The S_2A_3 and Fantham may have been influenced by contemporary journals with succinct titles, or perhaps were reminded of the words of Sir Walter Hely-Hutchinson (1849–1913), Governor of the Cape Colony from 1901 to 1910, who addressed the Association when he was President in 1908. As part of his Address, Hely-Hutchinson said:

*Take, for instance, the question of scientific publications. Scientific papers appear in the publications of various and diverse scientific societies and institutions in South Africa ... many are buried in Blue Books if not mummified in manuscript ... But there is no such thing in South Africa as a South African journal of science which might serve as a common channel of communication between the scientific workers throughout South Africa, and between them and the general public.*⁹²

By the 1920s, the *Report* had taken on some of the attributes of just such a “Journal of Science”.

Advertising within South Africa was difficult, but the S_2A_3 also promoted the Journal in *Nature*, probably irregularly. In 1932, for example, editor Fantham gave a detailed summary of the Annual Meeting held in Durban that year that included a mayoral reception as well as excursions to local places of scientific attraction. As it is likely that he included in this report those articles he considered to be of interest to the international community and described to them, it is useful to itemise some of them. Papers read numbered 117; one of the popular evening lectures was by General Jan Smuts on “Climate and Man in South Africa”. S_2A_3 President, veterinarian and zoologist Petrus J. du Toit (1888–1967), head of research at Onderstepoort and a promoter of international collaborations particularly within Africa⁹³, titled his address “Africa’s debt to science”. Other items Fantham considered worth mentioning were “The geological history of Durban” by L.J. Krige, Director of the Geological Survey; “Particles and Waves” by Richard W. Varder (1889–1973), Professor of Physics at Rhodes University College; “Evolution as a palaeontologist sees it”, by Robert Broom (1866–1957); “A survey of our present knowledge of rockpaintings [sic] in South Africa” by Dorothea Bleek, then President of Section E; and “Missions as a sociological factor” by J. du Plessis (1869), President of Section F. (Johannes du Plessis was one of the founders of the Institute of Race Relations in 1929 and a leading activist for political reforms that would ameliorate the pass laws imposed on Africans. Accused of heresy, he was later dismissed by Stellenbosch University.⁹⁴) Fantham’s report is lively and detailed, but it is not possible to assess its impact on subscribers to *Nature* or discover how many might have purchased the SAJS volume or read it in a library in other parts of the world.³⁶

Fantham remained Honorary Editor until 1933, when he left for McGill University. His replacement was Harold (later Sir Harold) Spencer Jones (1890–1960), His Majesty’s Astronomer at the Cape of Good Hope, who vacated the post almost immediately on being appointed Astronomer Royal at Greenwich. He was succeeded by James A. Wilkinson (1873–1934), Professor of Chemistry (and Chemical Engineering) at Wits who, unfortunately, died the following year.

In 1937, Grahamstown-born pioneer ecologist and forester John F.V. Phillips, Professor of Botany at Wits, became Honorary Editor, assisted by Louis F. Maingard (d. 1968), Professor of French and Romance Studies also at Wits, whose research interests lay in San and Khoekhoe linguistics. Phillips introduced many stipulations to which authors had to adhere and there was less flexibility. He gave instructions for concise and original contributions, appropriate but not lavish illustrations, standardised references, and consistent punctuation and grammar. In addition, those who were not Members of the S_2A_3 who wished to have their papers published in the Journal had either to join the Association or pay publication expenses. In 1938, a formal refereeing process was mentioned for the first time – a recommendation from Phillips led to the appointment of a special committee to oversee the process. Thus, by 1940, the SAJS had taken on many characteristics of scholarly journals that are familiar today.

The SAJS: 1940–1972

Science does not exist in and of itself: it is always rooted in its social and cultural milieu. World War II had totally upset the world order and the Cold War that followed brought further global tension. International science was transformed by the War and created uncertainty about the fate of the SAJS. Moreover, politics in South Africa were volatile and in 1948 the National Party gained a surprising election victory. With wartime fuel and paper shortages, and with many members of the Association engaged in military duties, meetings were curtailed in length and the Journal inevitably became slimmer. The 1947 volume, for instance, consisted of some 155 pages, while the average in previous years had been around 700, often more. During the War, Annual Meetings were convened in Johannesburg. Secretarial assistance was available (at a cost) from the Associated Scientific and Technical Societies (AS&TS) situated in Johannesburg and to which the S_2A_3 had become affiliated.⁹⁵ In the 1940s an Associate Editor was appointed; this was Samuel B. Asher (1871–1951), retired Johannesburg City Librarian. For the next few years, Asher kept a close eye on the Journal, constantly reminding authors to follow instructions. At the time, the two official languages were given equal recognition, and the cover and title of the Journal became fully bilingual, as did the Association’s Minutes.

Matters specific to the War were published that are now of historical interest. They included, among others, an article in 1943 by mathematician and astronomer Arthur E.H. Bleksley (1908–1984) on “Recent advances in nuclear physics” and “Geology in war and after” by geologist and palaeontologist Sidney H. Haughton (1888–1982), war-time member of many South African government commissions relating to strategic resources. There were also two multidisciplinary symposia that debated the post-war future. The first (1942), “Science and post-war reconstruction”, consisted of 12 papers that focused on appropriate planning for the difficult decades that lay ahead. The second (1945), “A scientific approach to the problems of post-war employment”, consisting of seven papers, was published as service members were returning and as it became clear that the working conditions of black miners were increasingly intolerable.

The War had demonstrated that government spending was the motor that accelerated technological improvements and military urgency had stimulated many inventions. In South Africa, this manifested itself in the establishment of research institutions such as the Council for Scientific and Industrial Research (CSIR) in 1945 and its ancillaries. Governments began to spend large sums of money on what has been termed “Big Science” – applied sciences on a large scale.^{96(p.367-370)}

It is worth mentioning that a more geographically ambitious scientific institution was also established at this time and was one in which the S_2A_3 could participate. Perhaps prefiguring the developmental vision of the later Academy of Science of South Africa (although steeped in a colonial mindset and Hailey’s *African Survey*)^{32,97,98}, in 1950, the Scientific Council for African South of the Sahara came into being and aimed to “advance the interests of Africa”⁹⁹. In 1978, to celebrate the 75th anniversary of the first meeting of the S_2A_3 , in the SAJS Stanley Jackson praised the establishment of the Council for emphasising the “need to think about education of all races in relation to science and to

think perhaps a bit more carefully about the kind of science that South Africa should do...⁸. He regretted the short life of the Council, because it prevented Africans from “taking the lead” in defining what types of science were appropriate for Africa. It appears that South Africa’s membership in the Scientific Council ended in 1965 (perhaps before) when the institution merged with the Organization of African Unity, which was hostile to the apartheid government, under the name of the Scientific Council of Africa.¹⁰⁰

Thus, in the 1950s, a new research culture developed in South Africa because of state investment in specialised scientific institutions, but also because of the increase in the number of universities. By 1945, the Universities of South Africa, Cape Town, Stellenbosch, and the Witwatersrand had become full universities, and the university colleges of Natal, Rhodes, Free State, and Potchefstroom were shortly to follow.⁴⁴⁻⁴⁹ Student numbers post-1945 were also boosted by returning service members. At Wits, for example, there were 2544 students in 1939, 3100 in 1945, doubling to 6275 by 1963.¹⁰¹ This put far heavier teaching loads onto all staff. The flood of government funding for research and increases in the number of specialised sciences and scientists drove even more publishing activity, principally of specialist journals which were attractive to commercial publishing firms. A competitive market thus developed.

This context also signalled the waning of the large Annual Meetings of the S₂A₃ and affected the format and contents of the Journal.⁸ Publishing original research in shorter papers became a driver of career progress and thus the number of researchers and specialised publications proliferated.¹⁰² The perhaps rather gentlemanly British colonial ambience of science, characteristic of the early years of the 20th century and that was emblematic of the S₂A₃ and its Journal, began to fade as the West became more Americanised. “New official agencies and state departments were providing the stimuli that were needed to advance science.”⁸ Simply put, the convivial Annual Meetings of the S₂A₃ were no longer appropriate, nor was the Journal.

Csiszar has argued that, at this time, “the public status of science was being negotiated” and that peer review – once regarded as stifling innovation¹⁷ – was required to adjudicate where state investments would be made and which project would be supported, and this practice began to permeate scholarly publishing and academia.¹⁰³ Baldwin has analysed *Nature* in this period, making similar observations.¹⁰⁴

The Minutes of S₂A₃ meetings that exist for the 1940s and 1950s and that are housed in the Historical Papers Research Archive at Wits, whether Council, Executive Committee, Publications Committee or Editorial Committee, are replete with fears over the future of the Journal. Costs had risen significantly. It was evident that, in this new world, if it were to survive, the scholarly gravitas of the publication needed to be raised and its content and target market reconsidered. It also needed to become financially stable.

At first, the Association attempted to return to the pre-war status quo. However, managing the Journal became increasingly difficult as volunteers, once plentiful, became reluctant to contribute their more limited spare time to it. Changes in the editorial team were frequent and when, in 1947, Phillips resigned and was replaced by Asher as Editor, there was a radical change in policy. The *Bulletin*, the S₂A₃’s quarterly publication, was expanded, published monthly, and renamed *South African Science* while the SAJS embarked on raising its quality and slimming its bulk.

After having first appeared in August 1947, it was clear by the end of the following year that this experiment of a second publication was not a success. In May 1949, the Council decided to discontinue *South African Science*, merging it with the SAJS, which appeared monthly from August that year.^{8,105} A total overhaul was required, but how this might be accomplished was a formidable challenge to those managing the cash-strapped S₂A₃. From 1949 to 1950, Lawrence H. Wells (1908–1980), a Wits anatomist and medical doctor with strong interdisciplinary interests, became Honorary Editor and, when he moved to Edinburgh in 1951, yet another model was introduced with the initiation of an Editorial Board as well as an Editor-in-Chief. This was Stanley P. Jackson (1905–2002), a climatologist at Wits.

Around this time, a change in the basic purpose of the SAJS can be discerned. In 1952, Grahamstown-born renowned physicist, and one of the founders of the CSIR, Basil (later Sir Basil) Schonland (1896–1972), was President of the S₂A₃. In his Presidential Address, celebrating 50 years of the Association, he re-emphasised the rationale for the SAJS. Having described the new environment in which the Journal and scientists had to work, he said that he continued to believe that providing information to the interested layperson lay at the heart of the Journal, together with the desire to expose specialists and professionals to developments in fields other than their own. He mentioned how the number of journals in the world had risen to many thousands, each year publishing around a million scientific papers. But he now regarded the Journal as a means of encouraging taxpayers to support state-funded science. He lamented that in this “growing mountain of scientific publication” the impact on government policy was not taken into consideration. Without knowledge of scientific developments, or of how and why research money is spent, citizens – and thus their governments and other funding agencies – would, Schonland considered, be reluctant to finance scientific research and this would have potentially deleterious effects on society.³⁰

Perhaps the most significant change of all in post-war publishing was the rising cost. In 1895, in the era in which the *Report* had first appeared, the Secretary of the Royal Society of London had declared that “a scientific journal ... is not a profitable undertaking... [they] ... are carried on with great difficulty ... and at a loss ...”. In 1957, with corporate interests looming, the Royal Society continued to argue that “Scientific societies must continue to predominate in scientific journal publication, for the moment commercial gain [begins] to dominate this field the welfare of the scientific community would suffer.”¹⁰⁶ Nonetheless, it was probably inevitable in the post-war world that the transition to commercialising journals and introducing business-style management and metrics (assisted by computerisation) would occur. As Fyfe recounts, what happened was that, “From a circulation-oriented, mission-driven service to scholarship, funded by learned societies, universities and governments ... [it became] a commercially viable enterprise in the early Cold War.” Around the world, there was a “general problem of production and distribution of [journals for ...] original research, which nobody wished to go out of existence, but which without some kind of help were on the way to extinction”¹⁰⁶. Like many journals, the SAJS seemed to be on the endangered Red List, as commercialisation and specialist journals became the order of the day.

While valiantly trying to maintain the traditional approach throughout the 1950s, S₂A₃ committees expressed anxiety about the poor financial situation of the Association and its expensive Journal. Cheaper printers were sought, as were more advertisers, but with little success. Furthermore, the Journal involved a large amount of voluntary work; every paper was considered by a Committee and referee reports (which were mandatory) were discussed, sometimes, then as now, with authors disagreeing with referees and correspondence having to follow. After the Annual Meeting in Lourenço Marques (Maputo) in 1969, for instance, 140 papers had been submitted and, after having been refereed, 81 were accepted and 9 rejected. Gradually, Annual Meetings became more like business meetings rather than large communal gatherings of varied scientists.

The work was onerous for a small group of volunteers, and it did not help that the editorial team changed frequently. Among others, this group included at times, geologist and palaeontologist H. Basil S. Cooke (1915–2018), anatomist and palaeoanthropologist Phillip V. Tobias (1925–2012), physiologist Christine Gilbert, and marine biologist William Macnae (1914–1975), all of them at Wits. Other Wits staff on the Journal included botanist, Communist Party member and (banned) anti-apartheid activist E.R. (Eddie) Roux (1903–1966). In 1955, Muriel J. Hyslop (née McKerrow), a member of the Wits Department of Zoology from 1952 to 1957 and 1970 to 1991, took over as Editor, assisted by an Editorial Committee as well as a Publications Committee.

In addition, the state was beginning to support independent scholarly publications it regarded as beneficial in terms of encouraging or reflecting significant national research. In time, government intervention became very complex. In 1964, the standardisation of page sizes as part of the national decimalisation programme presented a problem for the Journal

which had to alter its format at yet more cost.¹⁰⁷ Overt political meddling came in 1965 when the S₂A₃ and the Royal Society of South Africa, as well as others, were notified that, in order to remain eligible for research grants and other state support, they needed to amend their constitutions to make explicit a requirement that membership be restricted to white individuals only and, presumably, their publications be authored only by white people. Like the Royal Society of South Africa, the response of the S₂A₃ was that, although there were no black members, there was no proscription on the membership of other races and such a stipulation would possibly be detrimental to the aims and objects of the Association in the future. The records of the Royal Society of South Africa reflect that the matter rumbled on for some years, but, eventually, no constitutional change was forced upon either of these two societies.^{23,108}

However, more hurdles lay ahead.

By 1966, the alarm was sounded that the S₂A₃ would soon exhaust its funds. If the Journal were to survive, it would have to increase its academic standing and attract more readers. Once more, the editorial team was rearranged and, as well as an Editorial Board, there was to be an Editorial Advisory Board, and an Editor-in-Chief, assisted by two Honorary Editors.¹⁰⁹ The publication was simply not attracting high-quality contributions, and there was a suggestion that instead of waiting for articles to be submitted by authors, such might be invited. In addition, to save expense, publication might be reduced from monthly to bi-monthly or even quarterly.¹¹⁰

A further change came about when, in 1970, Nancy W. Van Schaik (1937–2023), née Worner, later Van Heerden, a US-born geneticist who worked at the University of Pretoria and then at Wits, became Chair of the S₂A₃ Publications Committee. In 1968 Hyslop, who had brought some stability to the Editor's position, resigned, and with her departure it was clear that paid professional help was vital.¹¹¹ After further discussion, money was found to employ two co-editors (at a combined annual salary of R1000) to produce the Journal. The position of Editor-in-Chief was held in abeyance. The employment of Louis and Kitty Kraft began on 1 April 1970, and this may have been at Van Schaik's suggestion because, through her marriage, she was connected to the Pretoria firm of Van Schaik publishers and booksellers and the Krafts may have moved in these circles. But the crisis was not solved; it became worse. After little more than a year, the Krafts asked to be relieved of their duties as Louis Kraft had become ill. Reading through the S₂A₃ material, housed in the Historical Papers Research Archive at Wits, the worries of those leading the Association at this troubled time are almost palpable.¹¹²

The language, ethnic, and racial divisions that have characterised South African society and its history were, however, also always at play, and the analysis of scientific societies and their publications within this environment warrants more detailed study. The S₂A₃ had been founded at a time when the British Empire seemed invincible, but after World War II its global primacy was eclipsed by both the USA and the USSR. During the 1920s, when Afrikaans became an official language, the S₂A₃ and its Journal became bilingual, but both membership and authorship appear to have been unattractive to Afrikaans-speakers. In the period from 1903 to 1954, a total of about 33 articles appeared in Afrikaans (as well as two in German and a small handful in Portuguese) from among about 2200 that were in English.¹²

The political problems were exacerbated because the Journal was managed principally by people at Wits, a "liberal" university, and this was not a recommendation for Afrikaans-speaking scientists and readers.⁸ More importantly, there was a powerful rival – Die Suid-Afrikaanse Akademie vir Taal, Lettere en Kuns, founded by J.B.M. (Barry) Hertzog (1866–1942) in Bloemfontein in 1909. (In 1941/1942 it was renamed the Akademie vir Wetenskap en Kuns.) Having established the *Tydskrif vir Wetenskap en Kuns* in 1922, in 1960, the Akademie began two Afrikaans quarterly journals in the niche occupied by the SAJS: the *Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie* and the *Tydskrif vir Geesteswetenskappe/Journal of Humanities*. From its inception, the political goal of the well-funded Akademie was to develop Afrikaans as a language and to nurture all aspects of Afrikaner culture. With the rise to power of the National Party, established by Hertzog in 1914, the Akademie grew ever closer to it.¹¹³ In 1959, by *Act No. 54*

of 1959, the Akademie was acknowledged in law as the sole national academy for South Africa.¹¹⁴ In referring to this period, namely 1948–1990, Beinart and Dubow describe it as "an autarkic republic of science and technology", marking a concerted push by Afrikaner nationalists to prove their scientific as well as their cultural credentials.^{96(p.264-318)}

Another South African multidisciplinary scholarly journal is the *Transactions of the Royal Society of South Africa*. Consistently supported by its elected Fellows and welcoming long research articles – almost textbook length – the *Transactions* managed to retain its position as a leading multidisciplinary academic journal in the country publishing original work.²⁵ While in the early decades, the distinction between the Journal and the *Transactions* was clear, with the post-war emphasis on originality and career demands for publication, this became blurred as the Journal tried to find its modern idiom.

The SAJS: 1973–1994

To secure the future of the SAJS, behind the scenes, matters were moving in quite a different direction from the reshuffling of editors and tinkering with administrative arrangements. Physicist Denys G. Kingwill (1917–1997), an active member of the S₂A₃ and its Publications Committee, became involved. Invited to join Schonland's team in establishing the CSIR, he was appointed Director of Information and Research Services (1962–1983). In that role he frequently visited Britain and there he met the Editor of *Nature*, John (later Sir John) Maddox (1925–2009), former university lecturer and *The Guardian's* outstanding, sometimes controversial, science writer. In 1966, when *Nature* was in difficulties, comparable to those of the SAJS, Macmillan, the publisher of *Nature*, had employed the charismatic Welshman Maddox as Editor to restore the magazine's reputation and financial situation. Taking personal charge, Maddox overhauled *Nature* completely by adopting an informal style, clearing the backlog of articles, speeding up publication, taking quick decisions on manuscript acceptance (sometimes without peer review), inserting his own and other opinions on science politics and actively soliciting contributions. Importantly, he introduced newsier sections that included debates and discussions.^{14(p.172-175)} Maddox seemed the perfect contact to assist the SAJS similarly, and Macmillan seemed interested.

Thus, the decision was taken to convert the SAJS into a commercial journal, published by Macmillan, a reputable British company, with subscribers paying a market-related subscription. Negotiations began in August 1971 but were slower than the S₂A₃ had anticipated. Discussions required agreement on the name of the Journal, its regularity, subscription price, and the appointment of a professional editor trained by, or employed by, *Nature* in London. In April 1972, the name of Dr Graham Baker was mentioned as the *Nature* representative/editor for the Journal, but unresolved difficulties continued to plague finalisation of the contract.¹¹⁵ In June 1972, Macmillan's conditions were agreed in principle, but the matter rolled on without quick resolution.¹¹⁶ By January 1973, the finances of the S₂A₃ had become critical, with a special Council meeting noting that the Association had completely drained its reserve funds.¹¹⁷

The broader historical context is important. By the early 1970s, the grip of apartheid was tightening, but South Africa was not yet completely isolated.^{96(p.264-318)} After leaving office as Britain's Prime Minister and predicting "Winds of Change" in Africa, Harold Macmillan identified an opportunity for his publishing company to contribute to education on the continent. Therefore, from both a business and a political point of view, he thought that acquisition of the SAJS might be promising. In October 1970, after visiting South Africa as the guest of the CSIR and others, Maddox had written a significant Leader in *Nature* titled "Science is a Trojan horse". He argued there that good research coupled to strong voices would benefit South African scientists in countering apartheid, as would better connections between them and those in the "outside world"¹¹⁸. *Nature* had demonstrated its own political courage when it had vehemently criticised Nazi science, leading to its ban in Germany in 1938.¹⁴ Acquiring the SAJS thus had potential for accelerating change. Maddox's hope – if that is what it was – that scientists and the Journal would play their parts in dismantling apartheid was, however, not to be realised. In a later article in *Nature* (1987), Maddox reflected on how science had not impacted apartheid as an agent for transformation, and

it was his opinion that the country's intellectual community had been found wanting, never having found a way "to argue the particular as well as the general case against the present arrangements" so as to "change the present climate"¹¹⁹.

Maddox's own career at *Nature* also had implications for the SAJS. As Managing Director of Macmillan Journals, Maddox was innovative and, in addition to widening the range of existing journals, in January 1971 he split *Nature* into three separate publications, rather like the S_2A_3 had done with the SAJS and *South African Science* in the late 1940s. He also published *Nature* three times a week, rather than weekly as had been the case for a century. These initiatives resulted in serious financial loss for Macmillan in 1972 and, after disagreements with some of the Directors and complaints from readers, Maddox left the company in 1973 just as it took over the SAJS. (He was re-employed in 1980.¹⁴)

Fortunately for the SAJS, Graham Baker had already arrived in Johannesburg. He had completed his DPhil in the physical sciences at Oxford in 1970 and had briefly been employed by *Nature* under Maddox. Beginning his work with Volume 69 in January 1973, a new chapter was initiated in the life of the SAJS, as Baker started to turn it around. His success was explained by Stanley Jackson in 1978:

*The editor did what his honorary predecessors had never been able to do. He got amongst scientists everywhere and learnt to know them and what they were doing – in the big laboratories, in industry, in the official agencies and in the universities. What was new and exciting was written up.*⁸

As a young British science writer at the start of his career in South Africa, Baker immersed himself fully in the SAJS. As an outsider, he may have found "the present conditions in South Africa as offensive as many residents think them natural" – as Maddox had expressed in 1970.¹¹⁸ But he made South Africa his home and brought dignity and new life to the Journal.

In its 150 years, *Nature* has had only seven editors and, in emulation of them, Baker was to remain the consummate professional editor of the SAJS for 36 years. There is no doubt that his was a difficult task in the political circumstances of the time but, before long, a changed SAJS was evident. It became more widely available on a subscription basis, with S_2A_3 members receiving a discount. Given the fresh look of the Journal, its energetic and professional full-time leadership, and the growing imperative among scholars to 'publish or perish', the SAJS regained readers and contributors. A novelty was to inaugurate a substantial section devoted to "News and Views" reports on conferences and Book Reviews.

As detailed in the final editorial on his retirement in 2008, Baker had discovered a dismal situation on his arrival. He had been warned that the best scientists did not consider the SAJS an appropriate outlet for their work. He found only three articles in the publication pipeline, none of which was satisfactory.¹²⁰ With Macmillan Journals now owner of the Journal, the S_2A_3 began to withdraw from day-to-day administration. Baker focused on the scholarly quality of the Journal and, under his direction, it gained support and prospered, growing in both intellectual stature and visual attraction – indeed it became a publication akin to *Nature*.

However, any euphoria over the initial takeover of the SAJS by Macmillan Journals did not last long. When Maddox was fired from the company in 1973, the Journal lost one of its champions. After the trial period of a year that was fully funded, perhaps it may also have become evident that the Journal would not be profitable. Thus, towards the end of 1974, it was back within the fold of the S_2A_3 . With unwavering support from Kingwill, who had appreciated its potential, the Journal was adopted by the AS&TS and Baker was given an office in Kelvin House. Despite the inauspicious start, in the first issue of 1975, Baker was already able to list the improvements that had occurred under his brief period at the helm. These included a circulation increase of 40%, which improved the precarious financial situation. While a sufficient number of research papers was received, it remained difficult to entice scientists to contribute news items about their activities.¹²¹

Content and subscriptions were not the only difficulties Baker confronted while he was Editor. State intervention in scholarly publications was about to bedevil the entire sector. In 1976, a Journal Management Committee was appointed, and on it, together with S_2A_3 representative Kingwill of the CSIR as the Convenor, were the nominal inclusions of Bleksley from Wits, and two new members, A. Strasheim (Director of the National Physical Research Laboratory) and F.A. van Duuren (Water Research Commission). With the appointment of the latter two individuals, formal ties between the Journal and state research institutions and their money had begun. A synopsis of the complex situation that developed in the 1970s and 1980s around the many state-funded research journals in South Africa was explained in the SAJS by Pouris and Richter in 2000. They authored a comprehensive investigation between 1998 and 1999 commissioned by the Department of Arts, Culture, Science and Technology (DACST) into the role of government in scholarly journals.¹²²

As Pouris and Richter summarise, in the late 1970s, appreciating the national strategic importance of original research, the government began to involve itself in assisting scientific and other independent journals that were not aligned to the state in any way. In time, these came to be "dominated by direct and indirect government intervention"¹²². Initial financial support came in 1976 with the establishment of the Bureau for Scientific Publications, a division of the Foundation for Education, Science and Technology within the Department of Education and later within the DACST. Production and marketing were centralised, grants and subventions were paid, and a process of accreditation was instituted to identify quality journals that merited state subsidisation. While the idea might have had merit, it was not a success. The Bureau lacked suitable editorial and management skills which, by the time of the investigation in the late 1990s, had become obvious. There was confusion, inequity, idiosyncratic inclusions, and support for inappropriate journals.¹²³

In some respects, the SAJS was an outlier in these developments. As Baker recalled in a comment to the author on a draft of this article, this was so because, while recognised by the Bureau, it was not a recipient of government largesse or control directly through this means. Fortunately, while funded principally by DACST, the Journal was transferred (without additional funding) to the Foundation for Research and Development (FRD) through the assistance of Kingwill after the AS&TS collapsed in 1990. Kingwill also organised office space for the Editor at the Foundation for Research and Development by appointing Baker to a special unit of the CSIR where he provided editorial services in kind. Had Kingwill not made these arrangements, it is very likely that the Journal would not have survived.

Rather than limiting circulation among members only, the Journal was published as a subscription-based periodical, which is now the most familiar model. Market-related subscriptions were set, rising annually and often dramatically (e.g. in 1974 the subscription cost was R18 (or US\$25), in 1982 R24, in 1987 R44, in 1992 R110, in 2002 R324, and in 2012 R730). In the early 1990s (from Volume 88), rather than 12, 10 issues were published annually. These figures demonstrate the decline of the South African rand as much as the rising cost of the Journal, but it continued to be sought after by authors and subscribers.

It is clear from assertions by Pouris and Richter that the SAJS had, by then, become the country's most outstanding journal in every way, and – notably – one of only three with a full-time paid editor. That it attracted the best research in the country can be judged by the fact that in 1993/1994, while South Africa's 48 A-rated scientists published principally in specialist and international journals, there were 14 articles in local Bureau for Scientific Publications journals, of which 11 were in the SAJS.¹²² The Journal had become the jewel in the crown of South African accredited research journals. As Pouris summarised in 2004, the SAJS was climbing up the citation ladder in comparison with other multidisciplinary journals internationally and was among the most highly ranked South African journals.¹²⁴

With Baker as Editor, and with assistance at various times from Bonnie Berger, Susan Jack, Lily Mitchell, Meg Kemp, Lyrr Thurston and Lizél Kleingbiel, the Journal was publishing interdisciplinary material that remains relevant. Contents tackled a variety of current topics like environmental science, palaeoanthropology, technology, research on

biodiversity, mining science, scientometrics, and nuclear physics. Work on HIV/AIDS, Marion Island and the Antarctic featured prominently. Sustainable development, ecotourism, and atmospheric science made their appearance. By contrast, articles on astronomy and physics, once relatively common, were extremely few, as were the social sciences and humanities.

Between 1973 and the mid-1990s, the SAJS had thus moved into another phase in its life; it could no longer be considered the mouthpiece of a democratic and varied scientific community that regularly renewed personal ties with one another. Rather, it attracted excellent scientists who saw academic merit and impact of their research from publishing in the Journal.

The SAJS: 1994–2002

The year 1994 was decisive in South Africa with the transition to a democratic non-racial constitution, an event as politically and economically momentous as had been the Union of South Africa in 1910. Ending apartheid had an impact on every South African as well as on every state institution. For the SAJS, change came with the dismantling of older scientific structures and the formation of their replacements. While he was in exile, anti-apartheid activist Roger Jardine had been Coordinator of Science and Technology for the African National Congress (ANC), the party which was then banned but which was later to govern South Africa. In 1995, with the ANC in power, Jardine was appointed Director-General of the DACST.¹²⁵ He restructured the managerial institutions within his large Department and one of the consequences was that journals under the aegis of the Bureau, as well as others that enjoyed state funding, were scrutinised and the Pouris and Richter investigation commissioned.¹²²

What was to become of the SAJS?

As Baker, who was to continue as Editor until 2008, has explained, each journal then had to seek its own future. For the next decade, the SAJS was produced by Isteg Scientific Publications, a small highly skilled company, located in Irene near Pretoria and run by zoologist Nico Dippenaar.¹²³ This arrangement worked smoothly with Baker's oversight. Other journals were not so fortunate, and many – including the *Transactions of the Royal Society of South Africa* which was also produced by Isteg but without a professional editor – struggled to survive. A few journals were taken up by university presses as part of their publishing portfolio, particularly by Unisa Press, while international publishers eyed South Africa for potentially profitable acquisitions at bargain prices.¹²³ Indeed, some journals were sold to international buyers.²⁵ Taylor & Francis, for example, saw an opportunity at this time when it began its Sabinet African Journals initiative. That company now owns or manages almost 20 southern African or African journals, some of which have contracts that allocate profits to these publications or to the scholarly societies involved in them, and very many of the journals in the overall Taylor & Francis stable are discounted to subscribers in Africa.¹²⁶

Even before 1994, however, moves were afoot to provide what was to become the new democracy with an ideologically appropriate science academy. Between 1989 and 1990, a Plan Document was discussed informally in academic circles, a development initiated by the Akademie (perhaps appreciating that its dominance was to be challenged) and facilitated by the Foundation for Research and Development (which itself was to become the National Research Foundation in 1999). The steps taken towards the establishment of what was to become the Academy of Science of South Africa (ASSAf) in 1996 were recalled in the SAJS at the end of 2001 by Wieland Gevers, Emeritus Professor of Medical Biochemistry at the University of Cape Town, and President of the Academy from 1998 to 2004. As he described, a group regarding themselves more as “concerned citizens” than scientists, and representing the Akademie, the Royal Society of South Africa and the Science and Engineering Academy of South Africa, together with a number of black scientists (whom Gevers did not name), debated the fundamental question of whether a national Academy was necessary for South Africa and, were it desirable, how it might function.^{10,127} One of this group, George Ellis, renowned cosmologist at the University of Cape Town, was particularly encouraging of a new scientific worldview that would be of practical

benefit to wider South African society, not only those already privileged, although ‘blue skies’ research would not be neglected.^{96(p.319-327)} It was generally appreciated that South Africa's political isolation would end with democracy and that it would once more be globally connected with the many benefits to knowledge generation that would accrue.

If there was dissension over features of the budding organisation at the time, they are not mentioned in Gevers's article. There he described how various bodies boldly seized the democratic moment to maximise “better prospects than ever before for commonality of purpose among South Africans”, while allowing other academies to work with the new Academy “to achieve greater synergies and focus” and together develop democracy. Gevers's article outlined those parts of the Plan Document that pertained to the organisational structure and mission of ASSAf, noting that: “The Academy of Science of South Africa is constituted to ensure that leading scientists, acting in concert and across all disciplines, can promote the advancement of science and technology, can provide effective advice and can facilitate appropriate action in relation to the collective needs, threats, opportunities, and challenges of all South Africans.”¹²⁷ Some of the language and aspirations conveyed by Gevers resonate with those that informed the founding of the S₂A₃ in 1902, a time of an earlier critical political juncture in the country, as has been explained above. Also in line with the values of the early S₂A₃ was the ASSAf policy that it would not be a solely natural science academy but open also to the humanities and social sciences.

What the Academy introduced was the novel scholarly objective “to apply scientific thinking in the service of society”. Operating in a new political environment that required capacitating groups and communities previously disadvantaged through apartheid, the work of the Academy was explicitly developmental and service oriented. The elected membership was to be mobilised to utilise its expertise towards this goal.¹²⁸

With the conception that science needed to be connected to the urgent need for national material development, the government of Nelson Mandela took the decision to establish a new academy of science.⁹⁶ Thus, in 1996, ASSAf was inaugurated. Discussions continued while legal issues took time to finalise, but with *Act No. 67 of 2001* (in operation from 2002), the Academy was established in law as the state's sole national academy, replacing the *Akademie* in this role.¹²⁹ ASSAf would be overseen by, and funding would be provided by, the responsible Cabinet Minister, but the Academy itself would be independent.¹²⁷ This background has been explained because the future of the Journal was to become integrated into the mission of the Academy, indeed it was regarded as one of the means of meeting its objectives.¹³⁰ Thus began the next chapter in the life of the SAJS.

The 1996 initiative that propelled the establishment of a new national science academy for a changed South Africa was celebrated 20 years later in December 2016 in a special issue of the SAJS comprising a number of commemorative articles.¹³¹ (ASSAf also published a book to mark this anniversary.¹⁰) In his Guest Leader, Gevers – in understandably celebratory tone – recapitulated the five-year period that was led by the planning team and that culminated in the ASSAf Act in 2001 referred to above. The rationale of voluntary contributions from elected ASSAf Members had, it seems, also been decided upon in these first years, as well as the convention of consensus advice and consensus positions (or consensus reviews), on matters of scientific – evidence-based – knowledge.¹³² This harked back to the volunteer tradition of the S₂A₃.

It was agreed when the Academy was founded that, because of the high international stature enjoyed by the SAJS, indeed it was a “national asset”^{96(p.325-327)}, the Academy would be its new home¹³³, and that once the Academy was in receipt of state funding it would be fully subsidised by the taxpayer¹³³. As explained by Gevers in 2001, one of the major “goals and measures” of the Academy was “publishing/partnering major science journal(s)”¹²⁷. This meant that a publication team within ASSAf had to be established for the SAJS, and Baker, who remained Editor until 2008, was involved in the process. He suggested that editorial positions be advertised among the ASSAf Members to guarantee quality and expertise.¹³⁴ In August 2002, shortly after ASSAf's legal foundation and after all Members of ASSAf had been invited to nominate Editorial Board members (or themselves volunteer), the

Academy appointed three Associate Editors to work with Baker while ASSAf organised itself administratively and financially to take over the SAJS. They were zoologist Michael Cherry (Stellenbosch University), educationist Jonathan Jansen (University of Pretoria), and physicist Harm Moraal (North West University). The four other members of the first Editorial Board were chemist James Bull (University of Cape Town), Anthony Mbewu (Medical Research Council), archaeologist Judith Sealy (University of Cape Town) and Petro Terblanche (Medical Research Council and University of Pretoria). SAJS also boasted a Management Committee, comprising Gevers, Baker and Cherry. Physicist H.J. (Hennie) Smith, who had been employed by the CSIR from 1963 to 1980 and thereafter by the Department of National Education in the office of science policy until 1999, was, as the first Administrator of ASSAf, also a member of the Journal's management team.¹³⁵ Matters requiring practical attention at the start of ASSAf's ownership of the SAJS were, for example, whether Editorial Board members should solicit articles, and how editorial policy should be determined.¹³⁶ After difficulties about the location of the Editor's office had been resolved¹³⁷, the Journal began its new, and to date current, institutional affiliation.

Situating the Journal within the Academy heralded its return to a stable institutional base. Its quality, stature, name, and long history worked in its favour and there seems to have been no debate around establishing a new ASSAf journal, perhaps with a title something like the *Proceedings of the National Academy of Sciences* in the USA.¹³⁸ In addition, the SAJS – at least initially – had been a broad church in terms of the range and quality of articles that were published and in the kind of scientific news it provided. ASSAf intended to adopt the best of both features – the high quality of original work for publication, but also the inclusion of News, Profiles, Book Reviews, and Opinion pieces of a more general nature.

The SAJS: 2003–2024

In 2003, Gevers formally announced in the Journal that the Academy would take over ownership and publication, thanking Baker who would remain Editor for the time being. Just as the life of the SAJS had been integral to the S₂A₃, so too was the Journal integrated into the birth of ASSAf. During this final period of Baker's editorship, special interdisciplinary collections of articles were commissioned that highlighted subjects such as HIV/AIDS research in South Africa (2000), a century of science at Rhodes University (2004), Working for Water (2004), Sibudu Cave (2004), the coelacanth *Latimeria chalumnae* (2005), and the CSIR at 60 (2006). They, and others, remain important synthesis studies on important aspects of South African science. In this period too, with President Thabo Mbeki's ideas on an African Renaissance¹³⁹, and the restructuring of South Africa's universities in 2002 by then Minister of Education Kader Asmal¹⁴⁰, black authorship in the SAJS increased (although no racial statistics have been maintained) as universities transformed racially and research funds for early-career black scholars became available.

Graham Baker retired in 2008 and in his final Leader he recalled a few of the highlight articles that the Journal had published in his time. He, naturally, also made mention of the ISI listing which came within the first decade of his editorship.¹²⁰ Over almost four decades, he gave the SAJS its modern voice and its reputation, setting it on a successful journey in what were very difficult years in South Africa.

From 2009, the SAJS had a new look under new management and, for the first time, dedicated paid staff and technical service providers ensured regular and quality production and distribution. It should also be mentioned that, as the S₂A₃ had done for the visits of the BAAS in the 20th century, ASSAf hosted the Academy of Sciences for the Developing World (TWAS) in 2009. The theme of this visit was also not unlike that for the BAAS visits, which was to give South Africa the opportunity to profile local science. A celebratory book, also similar to those of the S₂A₃, was published to mark the event.¹⁴¹

This article is not the place to provide an account of the short history of ASSAf, any more than it is to do so for the S₂A₃. In time, when greater perspective is possible and when what are now sensitive documents that detail the twists and turns of debates within the Academy and its Journal, and of its relationship with the state, are made publicly available, critically investigating the many personae of ASSAf and its subsidiary

institutions, like the SAJS, will be worthy of historical attention. The objective here, though, is to focus on the SAJS and ASSAf in its role of publisher and owner.

With the acquisition of South Africa's most prestigious and well-known journal title, the *South African Journal of Science*, ASSAf was in a strong position to maximise its objective in terms of involvement in scholarly journals and scholarly publications in the country more generally. Perhaps one might even argue that the SAJS shaped the formation of ASSAf's Scholarly Publishing Unit by providing an example of excellence in all respects. For ASSAf was now the owner of the longest-existing and most highly cited South African multidisciplinary journal with wide international recognition. ASSAf's head start in scholarly journal publishing was thus unassailable and the Academy embraced its leading role enthusiastically. In his final Leader, Baker had summarised the success of any journal as teamwork, attention to detail, hands-on specialist publishing skills, and competent management.¹²³ With the large resources of the state at its disposal, ASSAf was able to meet all four criteria.

In fact, it was able to do more. Over the past 20 years, ASSAf has maximised ownership of this flagship journal to leverage, enhance, develop, and support academic publishing in South Africa. Without the example of its own pre-eminence in the field as a catalyst, ASSAf may well have taken much longer to establish itself as a fulcrum of scholarly publishing. While the time is not yet ripe to evaluate critically those initiatives in the longer run, they are worth mentioning.

Before Baker's editorship of the Journal ended, two important decisions were taken. The first was to establish the Scholarly Publishing Unit within ASSAf – effectively replacing the old Bureau. However, careful research had been conducted on what such a unit might comprise and accomplish. It began life in 2006 after a consensus report entitled *Strategic Approach to Research Publishing in South Africa* had been completed during the ASSAf Presidency of Robin Crewe, an entomologist and then Vice-Principal of Research and Postgraduate Studies at the University of Pretoria.¹⁴² (A second report on this subject was published in 2018.¹⁴³) Baker commented favourably on the broad recommendations of the first *Strategic Report* but was disappointed at "scant mentions of the realities with which the country's journals have to grapple"¹²³. Nonetheless, with the Scholarly Publishing Unit in place, a start could be made on establishing the Scholarly Publishing Programme at ASSAf.¹⁴⁴

It is not the intention here to give a history of all the initiatives within this Programme, but it has been suggested that, for the benefit of readers of the SAJS who might be unfamiliar with the workings of ASSAf and its contributions to scholarly publishing, mention should be made of some of the most important.¹⁴⁵ The overall point to be made, however, is that without the quality and strength of the SAJS from the outset as an example, the wide range of publishing tools, committees, and expertise would have taken far longer for ASSAf to establish.

The Journal itself was to continue to be multidisciplinary, publishing only original work, but specifically – as part of ASSAf – to include the humanities and social sciences which had tailed off under Baker with the foregrounding of the natural sciences. Contributions also had to be of reasonably short length, written in an accessible style, and be of interest to a variety of readers. In line with government priorities to liaise with academies in Africa, the focus was to shift from South Africa to include science on the African continent and the SAJS would welcome submissions from Africa or on Africa-focused research. A magazine element would be included in a 'front section' that allowed for debate around research, higher education, and other matters relevant to southern African scientific life.¹⁴⁶

Baker was not replaced by another full-time salaried editor and ASSAf reverted to a more committee-like structure for the Journal, as had been the situation until the early 1970s. Michael Cherry, then contributing African correspondent for *Nature* and an Associate Editor, was employed as part-time Editor-in-Chief with a term of office that ended in 2012. At the time, Linda Fick joined as full-time Editorial Assistant, later to become Managing Editor, a position she has retained. Ten part-time Associate Editors from different universities in South Africa have been responsible for overseeing manuscripts through peer review and acceptance for certain clusters of disciplines, rather like the Section Committees had

done in bygone years.¹⁴⁷ With the appointment of Editors-in-Chief John Butler-Adam (2013–2019), Jane Carruthers (2019–2021) and currently, Leslie Swartz (2021–), this model has continued.

Technological advances in publication have brought drastic changes to the production of the Journal. Noting in 2000 that “the world of scientific publishing is in turmoil”¹²², Pouris and Richter had identified numerous future scenarios that would confront scientific journals. Of them, changing technology is perhaps the most critical. From 2002 onwards, ASSAf began investigating online publishing.¹³⁵ The era of print-only journals was being threatened by the Internet, demands for open access, and technical advances in electronic publishing. In this regard, the Journal needed modernisation and, in the long term, it was anticipated that this would be financially favourable. Printed copies were phased out, terminating at the end of 2015, subscriptions were ended, and the Journal is available without charge online.¹⁴⁸ South Africa is fortunate to circulate good research in a journal that is freely available to both authors and readers – a rare luxury anywhere in the world.

Baker’s commitment to public outreach chimed with that of ASSAf, and his proposal was accepted by the Academy – with financial support from government – to publish a well-illustrated and colourful quarterly popular science magazine. This would be a non-peer-reviewed partner to the SAJS and entitled *Quest: Science for South Africa*.³³ Like the SAJS, *Quest* is distributed online free of charge, but printed copies can be mailed to paid-up subscribers.¹⁴⁹

In 2009, the SAJS became one of the first journals in South Africa to become fully open access, one of the vital advances in modern scholarly publishing. In 2012, the Journal was the first to be uploaded onto the SciELO SA online platform. SciELO (Scientific Electronic Library Online) is a cooperative publishing electronic model for open access journals that was established in Brazil in 1997 and specifically designed for developing countries. ASSAf facilitates South African scholarly journals in joining this platform and currently there are more than 100 on the local list.¹⁵⁰

Linked to the SciELO initiative are ASSAf’s Khulisa Journals – all of them on the SciELO platform hosted by ASSAf while maintaining their independence. Khulisa (which means ‘to grow or nurture’ in Zulu) is a federated platform which enables this group of journals to take advantage of training, improvements in technology, content management systems, and access to professional editorial assistance from ASSAf and the team at SAJS.¹⁵¹ At present there are almost 20 journals in the Khulisa group.¹⁵¹

Further journal publishing services offered by ASSAf are the regular peer review of groups of academic journals arranged by disciplines.¹⁵² This process (which can sometimes be slow as it relies on volunteer reviewers) controls quality and monitors Editorial Boards, peer reviewing processes, and other aspects relating to scholarship and journal management and publication. ASSAf has also published *Guidelines for Editing and Peer Review* that established the high standards to which scholarly journals in South Africa are required to adhere.¹⁵³ In addition, a Committee on Scholarly Publishing in South Africa has been created to deal with matters as they arise.¹⁵⁴

From this list of activities, reports, initiatives, and long-term commitments offered by ASSAf, it will be evident that the SAJS has evolved over more than a century from a volunteer-run scientific periodical reporting on personal interactions and papers read at convivial meetings into one, and vital, component within ASSAf as part of its substantial government-supported bureaucracy. And within this vortex of activity, the SAJS has maintained its high stature, the quality of its published articles, and the relevance of its news and opinions in the front section. Suffice it to say, that after the takeover by ASSAf, with paid technical and managerial staff as well as part-time Associate Editors responsible for different sets of disciplines, plus access to up-to-date production technology, the SAJS has become the kind of journal familiar to academics around the world. The website is clear on electronic submission requirements, double-anonymous peer review, tight editing guidelines, word limits, and a defined reference style.¹⁴⁶ As is explored elsewhere in this special issue, the Journal is not short of submitted manuscripts and the website records a rejection rate of 95% in 2023, primarily because aspirant

authors, often desperate for a publication outlet to enhance their careers (and without payment for publication), generally do not appreciate that the SAJS is specific in its mission to provide high-quality articles, written for a non-specialist readership, that must focus on South Africa or Africa in terms of interest or relevance. The Journal has a high citation rate and impact factor, as is also explained elsewhere in this issue.

Conclusion

Biographical simile has been used to explain the changing ‘life’ of the SAJS over the 120 volumes that have been published since its birth in 1903. This approach has enabled a focus on the Journal itself as an actor in South Africa’s history of science communication and, indeed, science itself. Like any life, it has ebbed and flowed with historical and institutional constraints and opportunities. It has aged, matured, changed direction, met difficulties successfully, or succumbed to some of them. But, of course, that life has not ended, and the history is incomplete. Throughout these many decades of publication, the Journal required reimagining by institutions and individuals to survive the challenges of passing time and changing contexts. It also required editorial and managerial nurturing to enable it to grow and develop and adapt, not always easily, to change. It has also needed passionate scientists in very many fields to contribute their research to it and thus enable the Journal to attain its scholarly maturity. It has been fortunate to have found supporters, protectors, advocates, and contributors over a very long period of time, and this in a country renowned for extreme social and cultural diversity and political division.

Changes in methods of disseminating scholarly research over the last 20 years have been rapid. As Baldwin describes, “the growth of online publishing has placed scientific communication in a moment of transition not unlike the moment in the nineteenth century when the scientific journal rose as the dominant form of communication”^{14(p.238)}. But the academic journal has not merely moved to a different platform, it is undergoing comprehensive radical transformation. How the SAJS responds, for example, to open peer review, different scientific paradigms (indigenous knowledge), artificial intelligence, or the power and immediacy of social media, among other innovations that may pose a threat to evidence-based science, has still to be seen. Currently, it has the advantage of being situated within a recognised academy of science and funded by the South African fiscus. It is entirely possible that in the future, under different circumstances, these may not remain the strengths that they presently are. As Fyfe et al. have stated, “a better understanding of the history, rather than the myth, of scientific journals is crucial to help us decide which practices and functions should be included in any new vision for academic publishing”^{17(p.605)}.

The overall life of the SAJS may be summarised by its resilience, its adaptability, and its excellence in different ways at different times, and it has persisted through one of the most momentous centuries in recent human history.

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Data availability

There are no data pertaining to this article.

Declarations

There are no competing interests to declare. I have no AI or LLM use to declare.

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