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Cover:
Globus was forged in 1969 by the late Fritz Ulrich for the Hugo-Junkers School in Aachen, Germany. Measuring over six feet in diameter, this stainless steel globe is a most appropriate beginning to our international focus — not only because of its global form, but as well because Prof. Ulrich provided ABANA with its first international contact at our 1974 Conference in Georgia. It is to Fritz Ulrich, and the other Atlas in the revival of blacksmithing, Alex Bealer, that this issue is dedicated. Photo by Mary Gerakaris.
The ANVIL'S RING is the official publication of the Artist-Blacksmiths' Association of North America (ABANA), and is mailed to members on a quarterly basis during the months of March, June, September and December. Membership is available to any individual or organization interested in the art of blacksmithing.

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The Issue at Hand . . .

WHY?

They may profoundly influence your life: three independent events of international ramifications have all occurred within the same year for the sake of blacksmithing. To better understand these events and their significance to you, The Anvil's Ring presents this first in a series of issues devoted to an international focus on the state of blacksmithing and an investigation of our place under the sun.

The momentous events are the ABANA-CBA Joint Blacksmith Conference held at Santa Cruz, California; the International Conference and Workshop held at Hereford, England; and the International Exhibition of Modern Blacksmithing and Sculpture held at Lindau, Germany.

The techniques, designs, and thoughts presented at those events fill the pages of this issue and will flow into succeeding ones. But that is just the beginning. The primary purpose of all this new data is NOT to applaud the accomplishments of others; it is rather to give us a broadened perspective of where we stand and thus enhance our own concepts of what we may aspire to that we may better maximize our own potential.

So, if this process is to help us, we must do our part. We must without prejudice examine what others in the world are doing and decide what insights and lessons this holds for us. And, through the use of The Anvil's Ring, we can share our new questions and insights and develop a dialogue to better understand our own journey through time and space. Space will be set aside for your opening remarks in our next issue; time for your space-out editor to receive this or any other material is ten days after you've received this issue. Happy New Year!

Dimitri Gerakaris
Editor
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We gratefully acknowledge financial assistance from the U.S. National Endowment for the Arts that is helping to make this special focus possible. For details of this and other grants, refer to the section of this issue entitled "ABANA UPDATE."
To understand how three international blacksmithing events can shed new light on our lives, we can begin our inquiry by examining their goals and reasons for being as stated by those who organized their direction:

Forging Iron:
International Conference and Workshop

22-28 July 1980 at Hereford and Coalbrookdale, England
sponsored by the Crafts Council of England and Wales

The following is from statements of the Crafts Council and Anvil's Ring interviews of Victor Margrie, Council Director and instigator of the event, and Caroline Pearce-Higgins, the Council's Education Officer and chief planner of the conference:

Over a hundred leading blacksmiths invited from 15 countries as far away as Japan and New Zealand were joined by approximately half that number of jewelers, sculptors, architects, designers and teachers to look at a wide variety of work by leading artist-blacksmiths and to discuss current issues ranging from design problems and techniques to market considerations and the education of smiths.

The first five days were spent at Herefordshire Technical College where illustrated lectures filled every morning followed by a wide choice of arena demonstrations, discussion groups, and short lectures each afternoon, and finally more lectures each evening.

The idea for the conference began nearly five years ago when British blacksmithing was stagnating in isolation. At that time, Richard Quinnell returned from America excited by the cooperative aspect of a group called ABANA; he founded BABA, our British counterpart, and with government aid travelled the Continent to investigate the state of the art. Already working towards a conference, the Crafts Council's Caroline Pearce-Higgins accompanied Richard on an odyssey of over 3,000 miles and 30 major forges — largely directed by previous Lindau Exhibition catalogs. Further excited by what they saw, the plans of a conference for the Brits took on international proportions, the focus of which was bridging the gap not only from nation to nation but from traditional approaches to the realities of the modern world.

1. Caroline Pearce-Higgins, planner of "Forging Iron". 2. Simon and Prof. Toni Benetton of Treviso, Italy attack a plate of hot steel while Florian Unterrainer of Kitzbühel, Austria holds on. 3. Alfred Habermann of Czechoslovakia intensely strikes while the iron is hot. 4. Serge Marchal of Nîmes, France is assisted by Jim Wallace of Memphis, Tennessee. 5. The exchange of ideas permeates every moment. 6. Bruce LePage of Belleville, Wisconsin commemorates the event with an engraving. 7. No translations are required when forging is spoken. Photos by Mary Gerakaris.
The International Exhibition of Modern Wrought Ironwork and Sculptures

23 May-10 September 1980 at Lindau, Germany; sponsored by the Fachverband Metall Bayern (the Metal Trade Organization of Bavaria) and the City of Lindau

1. All roads lead to Lindau, or so it seems at this island city near the borders of Germany, Austria, and Switzerland with Italy and France not far away. 2-5. This exhibition was staged in a gigantic, modern tent and spilled into the parks and malls of Lindau. 6. A work of this exhibition by Lothar and Gisela Klute stands before the Lindau Rathaus, site of former exhibitions. 7. Herr Egon Blümel, planner of the exhibition. Photos by Mary Gerakaris.

This project is supported by a grant from the National Endowment for the Arts in Washington, D.C., a Federal Agency.

December 1980
Advice of what to look for, from which the following is excerpted, was given in the introduction to the conference program by Conference Chairman, Thomas Bredlow:

It can be argued that Professionalism consists in four ideas, or slants, all working at capacity. These are Excellence, Versatility, Application and Survival. Excellence may bring to mind the level of workmanship in the richest work and suggest that anything done to a lesser level was simply for want of a more extravagant buyer or more capable producer. But it is the situation and the judgement as to what level is appropriate that is the crucial point. It is the simplest solution which FULLY SATISFIES THE SITUATION.

But that requires Versatility, the ability to competently produce the fitting response at any level. Versatility also means a range of styles — which means Application —the right thing for the right job and the physical installation as well. Does it look like it came with the place or more like it came as an afterthought? Poor installation judgements produce the latter effect. Application. A utensil which does not fit the hand, unnoticeably and without a training session, is bad.

But there is another kind of application — that of just getting the work out so that customers receive what is useful to them. And if we are trying to make a living at it, that means FOR MONEY. Which brings us around to Survival. Most of the metal worked on earth was done by people who had to figure how to do the job right and still make a living. And we have more than merely our own survival — we’re also involved in the survival of taste and convention, while STILL having to make the NEW! In addition to developing the sense of WHAT to make, we have to make it GO.

It will be a fine conference without such an exercise, but let us take these thoughts into each session and see how what is presented hangs on each of the four pegs. Watch as our initial reactions begin to switch around and hang comfortably on the neighboring pegs. With it we can see how we all fit. It is that striving for what those before us have seen, and our wanting to bring it up to date, which brings us together. It is that beginning, from whenever we started, which we celebrate anew.

1. Alfred Schmidt of Trappenkamp, Germany 2. and Simon Benetton of Treviso, Italy belting out work of their own distinctive styles.
2. Dorothy Stegler in quest of the perfect globe.
3. Tom Bredlow, program chairman of this event. 5. Ironwork was displayed . . . 6. and ironworkers as well. 7. It wouldn’t be an ABANA conference without Jud Nelson. 8. The unforgettable forging of a samurai blade. Photos by Michael McCurry.
an architect's view of crafts and architecture in the 1980's

It's difficult to know how to talk directly to craftsmen, because for the past half century we have lived in different worlds. Once, the arts and crafts were integral parts of the building process. Craftsmen and architects both learned from a master on the job. A well developed architectural language existed and it was possible to delegate a good deal of work to a master craftsman, giving him but the roughest elevational sketches.

But the separation of art and craft and building probably began in the Renaissance when the artists moved out of the crafts guilds and the guilds themselves began to disintegrate under the impact of the new capitalist system. The utilization of water power, and later steam, facilitated the handling of large quantities of materials—the craftsman was submerged.

This change, however, was gradual in the building industry and the craft process persisted until between the World Wars with Art Deco being the last instance of the craftsman's active involvement. At this point, the ideology and role of architecture first radically changed since the Renaissance. Whereas before the architect had worked on palaces, churches, banks and grand houses where a degree of ostentation and decoration was essential, the new commissions involved factories, housing, railway stations, etc. The new attitude of "less is more" worked against decoration.

This was, of course, a perversion of the original intentions of the Modern movement. Gropius wanted the involvement of artists and craftsmen in a new styling with the help of the machine. It is truly ironic, now, while the technology is within our grasp, that we have suddenly separated our art and architecture and craft.

It's difficult for craftsmen to see there is a qualitative change in design—in the way things should be made—because of an ideological change. I've seen today at the conference some beautifully made traditional ironwork, but it doesn't take us any further than a very good example of that type of thing—it cannot grow from that. We must look for examples based on an understanding of geometry, elementary relationships, and nature that can lend a new resonance to our work.

The next few years will be very interesting because we will see a conflict in the direction architecture and our own culture will go. There will still be those concerned with high technology, perfect, coherent and self-contained systems; but those architects will have no need for craftsmen—if you see Star Wars, you will understand. But there are those of us who don't want to be run by machines and who would rather make something of beauty.

To survive, the artist has to pedal his unique individuality. He has to overcome the temptation to yield to the ever-changing art style. And, as a craftsman, he further needs skills which are both social and intellectual as well as creative and technical. He needs to understand what is happening at the creative end of the architectural profession and he needs to make friends there. He has to make an effort to meet and convince the architect that he has something to give the building and that he can be trusted with matters of taste.

The lights dimmed, and Mr. Crosby showed slides of ironwork he felt successfully related to the environment. Silence intensified as images appeared of Victorian cast iron and welded sheet metal doors from Saudi Arabia. As the lights came on, a vigorous debate ensued:

**Conferee:** What is the purpose of showing us these slides? If you had attended the whole conference, you would have seen the rich quality of work being offered to the architects... And we have an exhibition in Lindau, this conference in England—why don't the architects come to such gatherings to meet blacksmiths? (much applause)

**Crosby:** I think it boils down to asking "who is the buyer, and who's the seller?" (icy silence)

**Conferee:** Well how should a smith best present himself to an architect?

**Crosby:** Good question, it boils down to promotion. First, take good photos of your work. Then go to the architects' institute and learn of the people in your area likely to give you work and go see them. You have to make an effort.

**Conferee:** Would an architect look at the size of your operation, e.g. how many men you employ?

**Crosby:** Of course not, important is the reliability of the work, and by that I mean not only quality, but a record of delivering on time and within budget.

**Conferee:** We have today been told we have become the maker and not the designer of things. Are we now to be presented with a set of architects' plans that we, the anonymous craftsmen, are to execute?

**Crosby:** If you look at your environment, it is generally of what an architect thinks you ought to have. If you want to change that, you have to get at them in a very precise way with some ideas—and the only idea with any chance of moving them, since you can't do it with economics, is an artistic one.

**Conferee:** Perhaps part of the failure is in the actual education of architects? (malicious applause)

**Conferee:** Being neither an architect OR an ironworker, it seems to me from my perspective there is an enormous gap between these two groups... there's got to be a dialogue between you which now seems to be completely lacking; you've got to find a way to communicate.

The Anvil's Ring would be happy to pick up the ball to help develop this needed dialogue. Ruminations by smiths about their role with architects continues in this issue's article "The International Conference — Some Conclusions." If the readers of this magazine present the thoughts expressed in this issue to architects they know, with an invitation to state their views in upcoming issues, perhaps we can get the ball rolling.

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December 1980
TRADITION: Its Role in Blacksmithing

The role of tradition in blacksmithing was a major topic at Forging Iron: International Conference and Workshop at Hereford, England; for the first time, the International Exhibition of Modern Wrought Ironwork and Sculptures at Lindsau, Germany — long a stage for the avant garde — paid more attention to the role of tradition; and the thread of tradition wove its way throughout the fabric of the ABANA-CBA Conference as was witnessed by the formal talks of John Dittmeier, off-the-cuff statements of participants such as Donald Streeter, and a myriad of other manifestations. Here you find samplings from these events on the role of tradition in blacksmithing and thoughts of how the use of tradition can be either constructive or counterproductive — of how it can be used as a broad foundation from which to build or carried like a heavy burden:

Serge Marchal, blacksmith of Nimes, France, expressed the following thoughts at the International Conference and Workshop at Hereford, England:

"Tradition is an oral transmission which links the past and the present; in our occupation the tools, too, have crossed the ages without significant modification — this "handiwork" — and all the works which have floated on the tide of workmanship across the centuries, make up a heritage which is common to all of us craftsmen. But we must not be so impressed by strong tradition that we are always looking to the past and endlessly copying past work at the risk of exhausting its richness of style and making from it something that is dull and insipid plagiarism. It is absolutely necessary to have a critical approach to tradition, and not to hesitate to question certain aspects of it. Nor should we hesitate in removing some of the dust which covers it — it can only become more lively and natural.

We must also beware of wanting to reject tradition as something out of date and tiresome. In the short term, this is the death of the craft which, cut away from its foundations, will drift at the mercy of contradicting fashions. It seems that some blacksmiths in the U.S.A. and Canada, who find themselves removed from tradition, are again looking for the roots of their craft through their own work.

Tradition is the safety-rail, the point of reference which guides us through our researches; it is the foundation stone on which one relies, which gives us the freedom to go on even further. Tradition passes through our own personal work, enriching it with new landmarks which show the path of the collective memory of the craft. Who can imagine the work which will emerge, permeated with this experience, acquired at the cost of the hardships and joys of our predecessors?"

Eric Moebius, blacksmith of Plain, Wisconsin, made the following declaration at the International Conference and Workshop at Hereford, England:

"It's generally accepted by most of the blacksmiths in the U.S. that we don't have an American tradition. The beginnings of ironwork in our country of Colonial type ironwork that was done by village blacksmiths is what most people consider to be our tradition. World wide the same type of work was being done, but we have viewed this as our traditional ironwork. In the period of 1890-1940 we had a great deal of emigration to our country. A lot of the people that came over were craftsmen, and a great deal of blacksmiths came to our country. It was a very wide open place to find a future. These blacksmith immigrants tended to head to areas of many people of their own nationality. So, a lot of ironwork was being done, but in the European traditions. People in our country have never really had a basis of understanding ironwork. During this 50 year period, a lot of work was done in the eastern part of the country. This made it difficult for people in the rest of the country to try to understand ironwork. So when we try to think back of what ironwork in our country is, it just is not existant.

There was a resurgence of blacksmithing beginning in the late 60's. This came from people who were desiring to work in a new medium of iron and steel in this resurgence of handmade objects and the crafts. When I began working in this, there really wasn't any tradition to look at. I really had nothing as a preconception of what ironwork was. A lot of this happened in schools and colleges. People just started working towards an unknown end. We weren't trying to work from a tradition — we were just trying to examine a material. We tried to do whatever was apparent in the material. This was a period of experimentation and learning."
Tradition [L. traditio, a surrender, deliver, pp. of tradere, to deliver] the delivery of opinions, doctrines, practices . . . from generation to generation. (Webster's Second Edition)

After this, when I was working by myself in my own shop for a number of years, I decided I needed to go back to tradition. So the only thing I could look towards was the European traditions. I started to try to study in books and search out some of the forms and ways of working that I felt were important. I wanted to try to understand the techniques in it, so that they didn't have control over me.

The country is just basically open to anything. But I wanted to lay strong restrictions on myself and learn how to deal with the subtle parts of ironwork, and what I wanted was to work with the surface of the metal not in a plastic state, but in a very subtle state and really work for the coloring in the metal.

I've just recently started to make a large set of driveway gates, 16 ft. wide × 14 ft. tall. This was another learning process for me and my brother who works with me. We wanted to see if we could work on a large set of gates and put them together in a classic method. We actually enjoyed this. I wanted to get away from all of the freedom and try to work to a real exactness. A lot of this may seem to be a loss of the creative power, but I feel that working in the field is a learning process. I hope that I can learn these processes throughout my life so I can have control of them. I think that this is a material that one cannot force in any way to a design. The design has to come from a complete understanding of the material itself.

Dimitri Gerakaris, blacksmith of Canaan, New Hampshire, expressed these thoughts at the International Conference in England:

I would, with all due respect, strongly disagree with anyone who maintains that there is not an American tradition of blacksmithing. While it is true that our earliest smiths brought with them the ways of the Old World and that the demands of a frontier existence precluded the development of a tradition which paralleled that which occurred in Europe, it was the uniqueness of that situation which gave rise to the tradition which is peculiar to the North American smith — the frontier spirit of innovation. Ours was a rich and virgin land exuding promise to those adventurous enough to pit themselves against the wilderness and find new solutions for new problems. It was this pioneer spirit that shaped the formation of American Industry and, continuing to the present age, it has been this spirit that gave rise to a new generation of the self-taught artist-blacksmith. Although I will agree that our tradition of architectural ironwork has been spotty, it is this frontier spirit of innovation and the courage to explore new paths that is the legacy, strength, and hope of the American smith.

Donald Streeter, blacksmith of Iona, New Jersey, while attending the ABANA-CBA Conference at Santa Cruz, expressed in casual conversation the following thoughts on the American tradition of ironwork, which he has graciously written down at the request of The Anvil's Ring:

It might be expected that America, the melting pot, would have absorbed and continued the English and Continental traditions of ironwork. Except in enclaves, this did not happen. In these enclaves, German, French, Dutch and English smiths produced provincial versions of their native forms. None of these influences persisted far into the 19th Century.

Whether the field was architectural ironwork, tool making, armor or decorative objects, the one characteristic of American work was innovation. The American iron industry was in the forefront of the Industrial Revolution.

Wherever the country afforded waterpower, forests for charcoal, limestone for flux and iron ore, furnaces and forges sprang up, providing smiths with an ample supply of raw material. Smiths helped build the prototypes of machines which eventually took over their functions in the new culture. The cut nail machine, in operation by the 1780s and the circular saw eliminated the need for nailers and saw makers and made possible the vast building boom which followed.

American improvements in iron casting eliminated the need for more and more smiths. Early cast iron copied the former wrought iron forms, but soon evolved its own character. American lock makers were making entire lock sets of cast iron by the 1840s while British and Continentals still forged them by hand with occasional stamped or cast parts. Iron founders shipped great quantities of cast iron grilles and railings to New Orleans and other cities. Much of this cast work often is mistaken for wrought iron by the uninitiated.

"I would . . . disagree . . . that there is not an American tradition of blacksmithing."

"the one characteristic of American work was innovation."

(continued on next page)
Although there was a revival of forged work at the turn of the 20th century in the William Morris period, the resurgence of the traditional work and its public appreciation came with the arrival here of Samuel Yellin and his men. Fortunately, most of their work survives and is a constant challenge and inspiration to all of us, both here and abroad.

The present state of the art in America is in a state of flux. Newcomers to the craft are exploring all areas. Modern technologies, new metals and combinations of media offer opportunities for expression not known before. With the whole past to draw from and the future to work in, exciting creations are being produced. The power hammer becomes an artist’s tool and makes its own rules. The arc welder makes possible forms and transitions undreamed of before. Whether or not there will be a definitive American style, or an international one, remains to be seen.

No one can tell what the future holds for smithing — all crystal balls are cracked — but as each smith finds his own place, develops his special skills and keeps his hammer flying, the possibilities are limitless.

Simon Benetton, whose forge is in Treviso, Italy, delivered the following thoughts at the International Conference in England, and again at the ABANA-CBA Conference at Santa Cruz:

Talking about working in iron is not actually a very difficult thing to do, whether we’re talking about what is happening in Italy at the moment or what is happening across Europe.

Since the dawn of the Iron Age, man has always wanted to use iron, and he has used it through to the present day where we find ourselves in the age of the machine. Both now and then, man has tried to exploit iron for all he can. Iron has continually been subjected to a whole range of things which have been invented — some of them very strange — which man can have at his disposal. With iron, however, the contact has been the same throughout the ages. This is what links man’s fascination with the metal — the relationship remains unchanged. The distinction to be made is that between the traditional way of working iron and the way which we can say bears our own modern, contemporary character.

Since W.W. II, there was a considerable period across Europe of 30-40 years, which had been a vacuum of awareness of what the craft of smithing is. Into this vacuum had occurred an infiltration by those who wished to establish new ways of working at an industrial level in an industrial context. Almost everybody had ignored what can be called the working of iron by hand. If not everybody, those who have not could be counted on the fingers of one’s hands. Those who managed to keep the tradition going of working by hand were only able to do it by using traditional methods, maybe giving little injections of new ideas of their own, but not really being able to combine it with a new flowering, a new modernity of approach, a new identity and sensibility of ideas. All of us who have gathered together in Hereford clearly share the aim of not wanting to follow back — or forwards — in the footsteps of tradition. But we also share the wish to give to that traditional method a new contribution which is modern and which is ours. Iron is a very generous material. Because it is generous, let’s want to work it in a way that will bring out its generosity. After all, it is worthy of our ambition to use it in new ways. Its character is suitable to our optimism.

Hermann Gradinger, blacksmith from Mainz-Gonsenheim, Germany, expressed these views at the International Conference in England:

Iron can have a graphic or a sculptural or an architectural role. It can be great and severe, or it can be very playful. It can be for a very down-to-earth purpose, or it can be graceful, ornamental work. Lightly shaped, it connotes a calmness. It concludes and it reopens. It separates and it joins. It requires distance and it performs its functions in everyday life invisibly. Mankind expresses itself in wrought iron as well as in other materials. And, in addition to the nature of style, we have the possibilities for applications which change according to custom and economic situation and have many different forms.

The working of iron in its basic traits has remained the same since primeval times. The hammer and anvil with the elements of fire and water — these are, and have been, the main tools. Forging is first of all a craft, and as a craft, it takes its place in an age-old tradition. But the question is, can this tradition nourish itself? Can it live from within itself? I ask this because tradition is not a creative energy. It is the very passing on of things that have been started at some point in the past and have been passed on from generation to generation and have been experienced and have been worked upon.

Now, as before, the iron must be heated in the fire and we forge the iron between hammer and anvil into grilles, gates, railings, sculptures, etc. But many things have changed. New technology and new ways of forming have brought change to this very deeply rooted craft and have made a lot of blacksmiths slightly insecure. The myth of Hephaistos, the god of fire and of the forge, is slowly disappearing. The smith of today has to behave like a businessman. He has to deal with architects and with businessmen in order to be successful.

Has this development led to a rupture with tradition? I think the break has happened a long time ago. Up to
the beginning of the 19th Century, there was no differentiation between art and craft. Art was seen as an enhancement of craft. But because of the beginning at that time of mass produced jewelry and other objects, and because of the disintegration of style, and the retreat of the artists themselves to a view of "art for art," this connection between art and craft dissolved and craft itself was completely deprived of art. Industry and the industrial workshops took over the production of forged iron ornamental objects in cast, punched, and pressed forms. This has remained so until the present day. Time has, in a way, stopped in the development of forged iron objects for a hundred years.

Only a few blacksmiths had the courage and the knowledge to start anew. In Germany, only great masters like Fritz Kühn and Ernst Schindler helped contemporary forged ironwork to its reemergence. Up to now, as well, we have had but few blacksmiths which developed their own thoughts about the possibilities to form and work iron in a contemporary way. The results are varied as the people that stand behind their design and execution. What they have in common is the desire to translate the art of forged iron into our times. This is no fixed language of forms as in the past eras. The task is more free — but has by no means become easier.

Because of the technical progress, we face new possibilities again and again for the realization of artistic ideas which are of our time. They enable us to create new dimensions and more adequate forms for contemporary architecture. They lead us to results which would have not been possible with the old methods and tools. But because of that, we are faced with new problems. Some believe that the technique itself has to be applied in the same way as our predecessors did. But our predecessors did not have any oxyacetylene torches nor electric welding equipment nor air hammers — if they had, they would have used them. Whether a piece of work is cut with an acetylene torch, whether it's welded in the fire or the new way, is very little indication of its real value.

The concise problem is that the art of forging iron has remained in historical forms for too long. Technology, architecture and general habits of life have, however, meanwhile changed a great deal. Our task is to break with this imbalance. Some believe they can achieve this by preserving the old techniques and forms, others believe this can be done by radical changes of these norms.

I think most things can coexist peacefully as long as the work corresponds to human dimensions, shows respect for the works of the past and shows a certain sense of contemporary culture. That, in concrete terms, means that we have the possibility and the task to give new human dimensions to a technical architecture.

The distance that has been created through the industrialization and standardization is something we must take note of. If this is the measure, then it doesn't really matter how we work the iron — whether in the traditional way or with new techniques. The decisive thing is that we find forms which respond to the material itself and which are contemporary — by that I mean forms that are useful, playful, but without a great deal of useless ornamental attention; because however much attention is given to the process of forging, the decisive thing is that we let the material speak for itself and continue a tradition in this way. Forged iron has many possibilities. It can be graphic, it can be sculptural, it can be architectural.

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John Dittmeier, speaking at the ABANA-CBA Conference at Santa Cruz, offered the following observations regarding the relationship of the past to the present while speaking of French ironwork of the 1920's:

The Exposition des Arts Decoratifs of 1925 Paris was an apex of decoration and a triumphant show of ironwork. But, as generations differ, so do the architecture and the decorative arts which they inspire. Thus, ornament, whether of past centuries or of the first decades of this one, came to be rejected totally in the twenties by the rising young set of modern designers and architects. The aesthetic of the machine usurped that of the handicrafts; the modernists, almost justifiably punished the excesses of Art Nouveau, Art Deco and the continuing historicism by banning ornament altogether from their structures and furnishings. The decline of the artisan trades and the erosion of the mastership system unfortunately accompanied the evolution of the International Style. The mature arts of 1925, such as Subes, who had been nurtured under Robert's tutelage, could not carry forward their mastery of iron into the thirties. Reyner Banham, a scholar of the modern era, says of the moment: "The precious vessel of handicraft aesthetics that had been passed from hand to hand, was dropped and broken, and no one has bothered to pick up the pieces."

Such it is that we young smiths must gather at Carbondales, Purchases and Santa Cruz' to revive our trade — to pick up the pieces. Our first works — Paley's come to mind — shout against the severity and silence of the old New Spirit. Moreover, in the mainstream, young, contemporary architects protest their past, the Old Guard of the Bauhaus, with ventures into post-modernism and historic eclecticism. However, whether we rework old forms, experiment with new ones or even contribute to a new style for our own generation, we mustn't prolong our outrages lest they become bothersome noise. Turn to the lessons of 1900 and 1925 Paris — decoration gone too far! [We might also do well to note] the 1763 quote by Grimm on Rococo:

"Bizarrie in decoration, in ornament, in design and in form . . . had reached its climax in France; they had

(continued on next page)
to be changed every moment, since a thing which is not reasonable can only please by its novelty.”

Like Robert of 1900, the North American blacksmith community might revive the trade and seed the future with accomplished journeymen. But, by the failure to show restraint and prudence in our executions (as advised by Henri Rene d’Alemane), we may guarantee a reaction to our own excessiveness. Like Brandt, a director of the 1925 Expo, we shall find a Corbusier in our midst (and another fence around another New Spirit will not suffice). Like Subes of 1929, our matured offspring will then see the momentum of the restoration lost, the forges again quieted — as Roccoco surrendered to Neo-Classicism, as Art Nouveau yielded to a modern classicism and as Art Deco succumbed to Purism.

Ornament is returning. How the new artisans, including ourselves, yet skilled and yet tempered by the past, will respond to the new advantages is a serious concern. Trite to say, history unlearnt will be history repeated. We must stop perusing the pictures and start reading the texts to know the lessons of the past. For both its triumphs and failures, let modern French ironwork serve the purpose.

Robert Gooden, Chairman of the Crafts Council of England and Wales, opened the International Conference and Workshop at Hereford with words that serve well as a conclusion to this stage of investigating our relationship to tradition:

With an architect’s training behind me my mind turns naturally to the close relationship between architecture and wrought iron.

In one sense the present time is unpropitious for your craft, for architecture during most of this century has had to do without the accepted vocabulary of ornament and decoration which any well established system of building design normally generates, a vocabulary which helps the ordinary person to understand the particular character of an individual building and, (what matters to us) provides the crafts which are ancillary to architecture with a set of elements of design from which they can assemble their own language which everyone can accept and understand.

What amounts to a stern trial, for the crafts which adorn architecture in good times, is the fact that architecture, having chosen deliberately (and wisely for the time being, I feel sure) an ascetic habit, has not wished to be provided by its ancillary crafts with those gentler, even beguiling accents which it has denied itself. So the forgers of iron, among other craftsmen, have been left unprovided not only with a vocabulary with which to speak, but unprovided also with the theatre in which they could accept, in better times, to be heard.

That applies to the craftsman’s work as an integral part of buildings, but not, thank goodness, to the craftsman’s work as an accent of enrichment and enjoyment to which the plainness of the building acts as a foil.

Truly architectural enrichment seems to come into being only very gradually and only as an extension of the basic method of construction — as the whole panoply of Greek and then Roman and then Renaissance architectural ornament develops over hundreds of years from the logical structure of a wooden barn, or as the whole panoply of medieval ornament develops from the structural strength and versatility of the pointed arch in countries whose quarries could provide small stones to make arches but not big ones to make beams.

But if ornament which is an integral part of architecture is lacking, how much greater is the need for the craftsman’s work as an accent of enrichment and enjoyment to which the plainness of the building acts as a foil.

That is the other sense in which the present time is not unpropitious for your craft, but potentially full of opportunity. Then how is the opportunity to be realized? I suggest simply by your own concerted will to make wrought iron so tempting, so exciting in its design that its introduction into, and around, the naked building will be irresistible.

That means innovation in design. You will be considering Tradition at the start of the Conference. Remember then that every bit of tradition was once innovation. Tradition is an accumulation of wisdom and successful achievement. Plunder the wisdom; and, in fair exchange, leave behind your own new and distinct contribution to the achievement.

This project is supported by a grant from the National Endowment for the Arts in Washington, D.C., a Federal Agency.

The Anvil's Ring
Contemporary ironwork of 14 countries is presented on the following pages. This presentation is not to applaud the accomplishments of others as much as it is to give us a broadened perspective of where we stand and thus enhance our own concepts of what we may aspire to. This study, which will continue in the next issue, is a reflection of work done by the participants of the Lindau Exhibition, The International Conference and Workshop of Hereford, and the ABANA-CBA Conference.

This project is supported by a grant from the National Endowment for the Arts to the efforts of Dimitri and Mary Gerakaris.

**Africa**

For all we know, ironworking may have originated on the Dark Continent. But no smiths from Africa attended the international events this past year, nor were there smiths from any of the other "under-developed" nations. We, of the over-developed nations, may do well to consider the origins of our craft. If we re-read Manfred Breidoli's account of the Blacksmiths of Togo (A.R., June 1980), we will realize those smiths were home, busyly serving the needs of their community.

The picture to the right of the Gong Gong from Ghana comes courtesy of Evert A. Johnson, Curator of Art at the University Museum of Southern Illinois U. at Carbondale with the following: This is a double bell without clappers. Sound is produced by striking the parts with a stick resulting in C below mid-C for the larger part and B above mid-C for the smaller bell shape. Measuring 11 1/2" X 3 1/4", it is obviously hand forged and welded quite expertly along the outer edges which form a flattened rib leading to the handle. No slight fissures or separations can be seen which speaks well for the smith's skill. Photo to the right from Manfred Breidoli: A blacksmith of Yohonou, Togo.

**Canada**

Ten percent of ABANA's members are Canadian. We would like to hear much more from our 130 fellow smiths to the north, but the cold air which sweeps off the Canadian Shield carries faint murmurs of renewed interest in the craft, some government funding of exhibitions and restorations, and the founding of a blacksmiths' school in Québec by the French Compagnons du Devoir.

From the primordial consciousness and hammers of Michael Spencer of Port Medway, Nova Scotia (whose "Coeur" above was made as the first trophy for the Annual Canadian Science Fiction and Fantasy Award) and John Little of Halifax (whose dragon to the right was part of a government sponsored exhibition). The fight was staged by the gnomes of the Anvil's Ring.
Czechoslovakia

This nation, until 1918 part of the Austro-Hungarian Empire, and before that the separate kingdoms of Bohemia, Moravia, Slovakia and Ruthenia, exudes a tradition rich in ironwork which is alive and growing today. The principle mover in today's scene is Alfred Habermann of Jihlava.

Habermann, 50, was first trained as an industrial smith who later became chief restorer of historical ironwork for his nation. After working for Fritz Kuhn, Manfred Bergmeister and Toni Benetton, he became recognized as a great master in his own right. We take pleasure in presenting his wide range of work:

1. Alfred Habermann's traditional work is done by traditional techniques.

2. A shop photo worthy of study.

3. Detail of a contemporary grille measuring 10 × 16½ ft. forged of ½ × 8 in. bars.

5. Habermann doing a repoussé face of 1.5 mm copper for a sign to a building that was once a mint.

6. A 10 ft. tall gate to a gallery in Opava.

7. This calligraphic grille in a pub alludes to the Czech euphemism for inebriation — "seeing the monkey."

8. Detail of steel plate deeply etched (3 mm) for ornamentation.
Achim Kühn, 38 of East Berlin, was trained at the forge of his father, the late Fritz Kühn, and has with his own contributions established himself as one of the foremost smiths of today. His having also obtained a degree in architecture is reflected in the monumental piece Sundial, photo 1, forged of 1 ft. square bar standing 8 ft. tall.

2. This is a 6½ ft. tall sculpture of steel and stainless steel forged of 4 in. square bars.

3. Swinging Steel is the title of this 7⅛ × 16½ ft. wall grille forged of steel and stainless.

4. For the Marien Church of Berlin, these 16½ ft. tall portals were forged of 1 mm. copper.

Photos by Achim Kühn.
5. Exhibited at Lindau, this grille by Karl Bergmann of Dresden measures 33 × 56 × 3 in.

6. This 47 × 43 × 1 in. grille at Lindau is also by Karl Bergmann.

7. Peter Bergmann, also of Dresden, made this 30 × 18 × 15 in. candlestand.

Photos by Mary Gerakaris
1. Wind, a 9 x 20 x 51 in. sculpture by Serge Marchal, 36, of Nimes was adopted as the logo of the 1980 Lindau Exhibition. Photo by Mary Gerakaris.

2. End view of Wind.

3. This bas relief, measuring approximately 10 ft. across, is also by Serge Marchal.

4. Detail of repoussé work done by Serge Pascal of Rosnay and his Les Metalliers Champenois for the restoration of the ironwork of the Place Stanislas at Nancy (photos 5 & 6). Begun in 1978, the project is to be completed by 4 smiths in 1982.
7. This is the culmination of the 36 ft. sculpture Les Mains Inspirées by Serge Marchal which soars through the house of the Compagnon d' Devoir in Nimes.

8. Radiation is the name of this 55 in. square grill exhibited at Lindau by Georges Rimmelstapler of Riedisheim.
Germany

With a 5.5% inflation rate, a 3.7% jobless rate, an appreciation of ironwork, and an affluent society which prefers to dwell in cities — behind ornamental protection — Germany is a fast-track for the blacksmith.

1. The current Dean of German smiths is Manfred Bergmeister of Ebersberg by Munich who, with his brother, German and 20 employees, churns out an endless flow of infinite variety including this altar cross exhibited at Lindau. This piece, measuring $43 \times 43 \times 5\frac{1}{2}$ in., was, with the exception of the spikes, forged of one piece. Photo by Mary Gerakaris.

2. Detail of altar cross. Photo by D. Gerakaris.

3. Railing in the distinctive style of Alfred Schmidt, Trappenkamp.

4. $56 \times 56$ in. grille exhibited at Lindau by Mathias Peters of Stolberg. Photo by Mary Gerakaris.

5. $33 \times 70$ in. grille at Lindau by Oskar Hafen of Meckenbeuren. Photo by Mary Gerakaris.

6. This soaring window grille by Manfred Bredohl, 36 of Aachen relates to its environment.
7. From Pliezhausen, Paul Zimmerman, 41, adorns this 65 x 25 in. grille exhibited at Lindau with a motif for which he is known. Photo by Mary Gerakaris.

8. 54 x 47 in. grille by Wilhelm Schnellenberger of Würzburg, also displayed at Lindau. Photo by Mary Gerakaris.

9. This gateway by Hermann Gradinger, 44, of Mainz conveys the sparkly feeling of the wine-taste room it protects.

10. 85 x 48 in. grille by Klaus Wabe of Villingen exhibited at Lindau. Photo by Mary Gerakaris.
Italy

There are many smiths active in Italy, where the blacksmith has been busy since the time of the Romans. But one name stands out today, and that is Benetton — especially since there are two members of that family who produce monumental works of great distinction, plasticity and 3-dimensionality.

Simon Benetton, 47, son of Toni, has made his own name. Having learned at the forge at an early age and having studied at the Accademia di Belle Arte in Venice, he now runs a shop with 20 men where functional and sculptural ironwork is produced. 1. Simon cuts the plate down to a "spine" around which the piece will be twisted. 2. & 3. Such a technique used to form the 16½ x 16½ ft. altar of Chiesa S. Paolo 4. The 30 ft. tall Monumento ai Caduti di Treviso is a fountain. 5. Detail. 6. Forged steel gates and grilles of the Cancelllo Inferiate. 7. Altar forged of steel.
Those present at the ABANA-CBA Conference at Santa Cruz were privileged to witness the forging of a Samurai blade by the Yoshihara brothers of Tokyo (photo 1), and to hear the ancient tradition of blacksmithing in Japan. However, it often comes as a surprise to western smiths, to learn from contemporary Japanese smiths such as Goro Hatanaka and Kotaro Kurata of Tokyo and Hiroshi Minamizawa of Kyoto that theirs is basically a culture of wood with no extensive tradition of ornamental ironwork. These men have begun by duplicating occidental styles and have but recently begun to reflect the style of their culture in their work. These photos are from the shop of Hiroshi Minamizawa of Kyoto who was a participant at the Hereford Conference. The son of bamboo workers, he discovered ironwork while travelling in the West, 20 years ago taught himself, and now employs a staff of 33.
2. Grille for the Royal Hotel of Osaka.

3. Detail of the traditional Japanese motif symbolic of sea waves.

4. A screen also for the Royal Hotel in Osaka inspired by the shoji, the traditional Japanese door.

5. Detail.

6. Free standing screen with a group of cranes — the symbol for long life and happiness.

7, 8, 9. Free standing screens. In the last one, note that the shape cut out of the plate has been used also in the creation of the pattern.

*Inspired by the activities of ABANA, over 20 Japanese smiths have allied themselves to form the Japanese Artist-Blacksmiths Association (JABA).*

December 1980
Switzerland

The vast majority of ironwork from this nation runs along "no-nonsense" lines with a growing number of younger smiths fighting for a wider, contemporary range of expression.

1. 74 x 34 in. grille by octogenarian Hans Wolder of Staliliken exhibited at Lindau. Photo by Mary Gerakaris.

2. Detail.

3. Door knockers by Christoph Friedrich of Rickenback exhibited at Lindau. Photo by Mary Gerakaris.

4. Cooking grate with stand, 29 in. across, by Jan Dudesek of Maur exhibited at Lindau.

5. Adjustable chandelier by Jan Dudesek of Maur exhibited at Lindau.

6. Fire tools, 27 in. tall, by Jan Dudesek.
7. Grille, 76 × 48 in. by Walter Suter of Matteng, exhibited at Lindau.

Scandinavia

8. Seven-armed candlestick, 22 × 30 × 9 in., exhibited at Lindau by Kauko O. Maio of Helsinki, Finland. A participant at the Hereford Conference, Mr. Maio cited a difficult climate in Scandinavia for blacksmithing due to complex government regulations and a generation of architects dedicated to the “international style.” Photo by Mary Gerakaris.

9. Weathervanes exhibited at Lindau of classic Scandinavian design from the Gislofs Smidesmuseum of Helsingborg, Sweden. Photo by Mary Gerakaris.
U. K.

Planning the International Conference and Workshop at Hereford, the Craft Council of England and Wales feared several years ago that British smiths were stagnating in their traditional scrollwork forms. Work exhibited at that conference and the Lindau exhibition showed the Brits to be anything but set in their ways.

1. 80 × 43 × 14 in. gate by Gino Rickard of Coalbrookdale, England, exhibited at Lindau.

2. Fire grate by Giuseppe Lund of Coalbrookdale, England exhibited at the International Conference at Hereford. Photo by Mary Gerakaris.

3. 85 × 42 in. gate by Tony Robinson of Shropshire, England, exhibited at Lindau.


5. Overall view of the 15½ × 28½ × 14¾ in. table. Photo by Mary Gerakaris.
6. 13 in. tall candlestand at Lindau by Tony Wooten. Photo by Mary Gerakaris.

7. 80 × 46 in. gate by Giuseppe Lund exhibited at Lindau.

8. 33 × 22 × 13 in. forged cross by Tony Wooten, also at Lindau.


IRELAND

10 & 11. The Celtic influence is strong in these fire dogs measuring 40 × 27 × 25 in. by Anthony Hedgecock of Gortahork, County Donegal, Ireland and the 18 in. diameter spiral serpent, both exhibited at Lindau. Photos by Mary Gerakaris.
This was the first International Exhibition at Lindau at which the work of Americans was shown. Those included were Lotte Cherin, Long Beach, California; Dimitri Gerakaris, Canaan, New Hampshire; Beau Hickory, San Francisco, California; Hubbarton Forge, Bomoseen, Vermont; Christopher Ray, Philadelphia, Pennsylvania; Thomas Sheets, St. Roswell, Georgia.


3. Sconce, 20 X 12 X 4 in., by Frederick Crist of Pooli, Pennsylvania, exhibited at the ABANA-CBA Conference. Photo by Mike McCurry.

4. Garden grille model, 15 1/2 X 12 1/2 X 3 in., by Lotte Cherin of Long Beach, California, exhibited at Lindau. Photo by Mary Gerakaris.

5. Items exhibited at ABANA CBA Conference centered around 16 X 30 in. hinges by Dorothy Stiegler of Rochester, Washington. Photo by Mike McCurry.

6. From the exhibition of the ABANA CBA Conference at Santa Cruz. Photo by Mike McCurry.
It can be difficult for us to see exactly where we stand and where we are going. It is to develop a broader perspective that we examine our own work in light of what is being done in the rest of the world in hopes that we can better realize our potentials. The development of a dialogue in The Anvil's Ring may be beneficial — however, a good hard look and many hours at the anvil will be essential.

7. Lantern, 6 in. with chain by Robert Owing of Point Reyes Station, California, exhibited at the ABANA-CBA Conference.

8. Door latch by Steve Bondi of Berkeley, California.


10. Door Pull by Steve Bondi.

11. Gate by Bruce LePage and Eric Moebius made at the International Conference and Workshop in Hereford. Photo by Mary Gerakaris.


13. Gate by Terry Steel of Bridgton, Maine.
The International Conference and Workshop

During the waning hours of the International Conference and workshop at Hereford, England, a general discussion of the conference sessions was held. Victor Margrie, Director of the Crafts Council of England and Wales, asked the participants to begin drawing conclusions regarding the lessons and impact of the conference. The following excerpts reveal the directions that dialogue took:

Victor Margrie
Crafts Council

With regard to our previous discussion regarding the relationship between smith and architect, there was a feeling that there is something wrong in the architect’s designing things and then expecting other people to make them for him; and yet, I’m wondering what the difference in the relationship actually is in a workshop where the master of the shop is designing something and having artisans carry it out? I felt there was a terrific sort of feeling there is something wrong with this and yet a number of blacksmiths are working in this sort of relationship.

Tommy Tucker
England

When you’re presented with drawings from an architect there’s a lot of problems — there’s a lot more work wants doing on drawings to work up the details of construction and a lot of the more subtle details. If the blacksmiths invite the architect to their premises and cite that there are these problems, and sweep the floor and roll out some paper and get down with some charcoal, in most cases I’m convinced that these problems can be resolved.

Richard Quinnell
England

A well known architect was invited by me to do just such a thing and wouldn’t come. He said he’d never get out of London.

Dimitri Gerakaris
USA

We might want to consider whether we want to bring Mohammed to the mountain or the other way around. Rather than try to obtain some of the architect’s time, we might perhaps better convince the architect, by means of our portfolios and references, that we can save him precious time if we in fact are competent to design the ironwork and take that burden off his shoulders. [Victor Margrie: How many blacksmiths are actually capable of doing such a thing?] I’m suggesting this as something that can become a goal for blacksmiths.

Giuseppe Lund
England

There doesn’t seem to be much humility on the side of the blacksmiths in this situation. Despite all the atmospheric dryness and insensitivity that there might be around many architects, they do put something personally into what they do. If you want to build a relationship with those men, you have got to do that on a personal level. You’ve got to know these men and understand what their problems and aspirations are. Just as they can’t force their designs on us, we can’t force our work on them: there must be a meeting of the two.

Victor Margrie
Crafts Council

How many blacksmiths understand what the avant garde architects are driving at or their motivations in the building of structures? I wonder if that is common throughout the world?

Hermann Gradinger
Germany

I think the way of approaching the architect as Dimitri suggested is the right one. But I’ve had situations where I’ve been presented designs and have had to tell the architect your designs are not practical for such and such a reason and I have offered alternatives, and this approach has been successful. The architects have been more responsive once they understand my motives.

Victor Margrie
Crafts Council

Could I go back to this question: Much of blacksmithing I’ve seen is out of keeping with other creative work being produced in other fields — I mean, it seems insular.

Jim Horrobin
England

I think it comes down to a basic problem that we tend to judge our work in terms of technique rather than design. The man who put his finger on it for me is Vaclav Jaros of Czechoslovakia — he showed us gates, made by a sculptor with little knowledge of technique, and demonstrated it is possible to produce beautiful work with an extensive knowledge of design. No matter how excellent our knowledge of technique is, it’s not sufficient in itself. We must develop our ability to make beautiful objects and not simply beautifully-made objects. In that respect, we have one supremely important tool we must learn to use, and that’s our eyes, and I don’t think we do this sufficiently. [followed by applause].

Tom Rees
Wales

I agree. I’m not a smith, but I know what he’s saying. A lot of people have to get together to get this thing going. As a sculptor, I feel there are things I can contribute which are not, at this moment, accessible to smiths. When we are together at symposiums like this, we are a very rosy lot, but when we go home we’re a rather disjointed lot with no sort of prestigious thing to work around — I think we have to get to be a little more collective as some of these other countries seem to be.

Unidentified
U.K.

I’d like to suggest, if the blacksmiths cannot serve themselves individually, they may indeed have to do it collectively. In Britain there is BABA which spends a lot of time talking among themselves to uphold the quality of the work. This is very
Some Conclusions

important. But in addition now, they've got to look outwards to make an impact on the architects.

Richard Quinnell
England
Yes, BABA has one of its prime interests in the promoting of the best blacksmiths' work to architects, the public, and so on. The first step to this is we have started to invite applications for full membership — there are two tiers of membership — and applicants will be assessed by a selection committee. Their work will be advertised within our means in an index to architects and the public.

Dimitri Gerakaris
USA
We with ABANA have a different approach. We, for many reasons, stay clear of actually trying to market our members' work. There is the complexity of doing such a thing in an equitable manner so that the people who run the organization do not end up getting a lot of work while losing all their friends; [laughter and applause] and who are we to arbitrarily stifle the beginnings of what may become some very fine and innovative new directions? I've also found other reinforcement for this approach at the conference when Msr. Souriou of France was asked if the Compagnons du Devoir makes any effort to find work for its members. He replied: No, that if the level of work fostered by the Compagnons is high enough, each person will have no trouble finding work — maybe not the day he steps out of school, but that such success is hard won, not through any easy formula, but through competence and persistance.

Victor Margrie
Crafts Council
The other day the question was raised why so few architects are interested in ironwork and Theo Crosby said that most respond that they are not interested by what they have seen. "It's not good enough" . . . now I ask you [the audience], when the work is actually good enough, do the people come to you. Is that a valid statement? [A great number of voices answer in the affirmative.]

Unidentified
U.K.
In our business, we're back in the 16th Century and we haven't kept our work up to go with the modern building styles, and we've been losing a lot of work.

Jim Horrobin
England
I have found that the better the work I do, the more customers I get; and I've been really surprised that as I've produced new work for no specific customer, as I've produced it, people have wanted to buy it, and I think it's true to say that the better the work we do, the better and more customers we get. This applies not only to individual customers, but to architects as well.

Hermann Gradinger
Germany
I agree again. And, we must not talk only of architects. I find that if your work gets better and there are individuals who have seen and like your work, they tell their architect that they want your work included in the project the architect is doing for them. And when I say better work, I am speaking of the quality of the design.

Alfred Schmidt
Germany
Yes it's quite clear, the way to the architect is not always that easy because the blacksmith's work has often not been included in the budget. The way through the private client is much easier. It's usually after the building has been used for a few years that the occupant might realize that something is missing. During this time, the client's money has also had a chance to accumulate again and the private client will approach the blacksmith, if he is skilled, to do the work for him.

Tom Rees
Wales
The architect is already responsible for the environment we live in, whether we like it or not. The buildings are designed by architects — there are very few good ones and so you can knock architecture forever, but you won't find the kind of success you're looking for at that level. You'll achieve it the way artists do: you build slowly on what you've got, and if you're given a job, you must upgrade it — not

(continued on next page)
only do it — bring it out of whatever mess it’s in and make the client grow in commissioning it. If you don’t do that, you’ll still end up making what he thinks he wants all the time. And when the cost is low, the design element is even more essential, because that’s when you really have to start working. [applause]

Victor Margie
Crafts Council
Good, does a conference like this help to upgrade work like that and get people thinking, and if so, in what way? [silence] Come on, Jack, [Andrews, USA] answer that question.

Jack Andrews
USA
You’re asking me that? [yes] Then I’ll evade that question. [laughter] Why? Because I don’t think it helps in that. I think far more important what the conference does is mix people together of diverse talent, attitudes and convictions and I know, in my own case, it’s a very broadening thing. But relative to how it will help the blacksmith actually working with the architect, I think it’s going to be a very personal kind of thing and each smith will have to identify with an architect if that’s possible and develop that relationship. I point out that in the U.S. only about 15% of the building that’s done, I believe, is designed by architects. So right away, we have a challenge. You might say we have a much broader market. And I think if we all want to look for a paradigm, an example of excellence to work to in our own work, and plan around these things, we’ll be a lot better off. But the main issue about this conference is what it’s done to mix people together.

Simon Benetton
Italy
Architects, too, feel completely submerged by a whole range of other considerations and professional preoccupations. For that reason, the decorative work of which a blacksmith might be capable of is, in proportion to the other things the architect has to think about, a minimal part which is very easily overlooked by him. So when I see a building that interests me, I go straightaway and talk about it with the architect and I see at once that he hasn’t the faintest idea about what working in iron is about. At this point, I turn into an advocate, and I try to inform him of what the various possibilities of work in iron are. And I have succeeded then in narrowing the gap of understanding between me as the craftsman and the architect in order that they might NEXT TIME think of including some decorative iron element in their work. So yes, we’ve got to educate the architects, but if we don’t nobody else will. [applause]

Eric Moebius
USA
I think one of the real important things of this conference is that when we go home to our individual, small shops, it’s a very lonely thing to think about trying to go out to educate architects and so on. But what does come from this is: what is the future of this? I mean, can you make a living? Is it a business. We are artists, but we are also running a business and to be able to see what people have done in Germany and around the world, it gives you some feeling that it’s worthwhile to stay in this. It helps a lot of young blacksmiths to realize there is a future in this.

Tom Rees
Wales
I hope I’m not only speaking of Wales, but of England as well [laughter] — from all the other countries it is becoming obvious, and I like to think this conference was THE turning point, when metalwork leaves the technical college and comes into the art college. That is how it’s got to be.

Alfred Schmidt
Germany
We have to realize that in addition to the creation of new artistic works, there is much fine old work which will require restoration at some point in time. But in Poland, there is a state enterprise of 6,000 men specializing in restoration work, and it’s taking a lot of work away from us . . . [Manfred Bredohl, Germany: Not from me! (laughter)]

Giuseppe Lund
England
I would like to say one thing about what Eric said about us going back to our lonely forges and having knowledge about things going on in other places: I think we all love our metal, but I also think we’re all a little bit insane and I think it’s great to know that when I’m insane in my place, and a lot of other people might treat me as insane, there are a lot of other guys in a lot of other places just as insane as me. [laughter]

Dorothea Stiegler
USA
I noticed that while we have often had to speak through interpreters, when a piece of iron gets hot in the forge, a person from one country jumps up with the right pair of tongs, and someone else appears with a striking hammer to help and everyone is working together — although we may speak different languages, from the fact that we work in the fire together, we speak a universal language and I think it’s very beautiful and something we should all be very proud of.

Tony Wooton
English (working in Germany)
I’m afraid I have to interject a couple of red herrings. I was struck by the number of problems we all have in common, but there are a lot of problems that are not translatable from one society to another, and those we will have to work out within each society. [Victor Margie: That’s not a red herring, that’s a fact.] And to pick up on Alfred Schmidt’s thought about art . . . there’s a quote of Marc Chagall that we may want to keep in mind when we speak of art. He said that when he views some modern art, he gets the feeling that the artist doesn’t love people, he only loves himself. We must strive to create an environment which is sympathetic to human beings.

Kauko Moisio
Finland
We have to think for the good of the customer. When the designer lets somebody else do the job, the customer does not get as individual work as in the case where the designer himself executes the work.
Mike Roberts
England
I've been rather confused with this architect argument. When I go to see a customer, first I go and see the job and the first thing I'm looking for is to see what I'm supposed to be. Am I to be an artist? Am I to be a designer? A craftsman? At some points, we are art-blacksmiths, at other times we are designer-craftsmen, if one thinks that way, you don't have to think much about what architects think. For example, last week I went to see a job, and I knew it was more of a design problem and I was very disappointed when I walked away because I had to tell the client in all honesty my iron would just not look right there and I wasn't going to do it. I felt then I had done my job as a designer. If we want to be not only artists, but designers as well, we have to be true as designers as well as art-blacksmiths.

Tom Rees
Wales
If I may pick up on that — that's O.K., you've all done your apprenticeship in the trade of blacksmithing. That's obvious, the things you make are made beautifully. But if you're going to be designers, you have to realize also that you have to train as designers. If you're going to be artists as well, you've got to do the sweat for art as well. You can't have it both ways. If you're going to call yourselves that, you've got to learn how to do it.

Giuseppe Lund
England
There is a danger here, I want to make the point about sculpture and blacksmithing. It is mostly apparent from the exhibition in Lindau. I was looking forward to seeing an international example of blacksmiths trying to solve their individual problems and relationships with functional metalwork. I was very disappointed to see that many blacksmiths, who I know solve their problems very well, have taken the exhibition to be an excuse for them to put forward sculpture. Now, of course, every mind that works in this metal may make sculpture. But I think if he wants his CRAFT to gain respect, he must make that distinction when going into an exhibition which is primarily to educate people about blacksmithing. I think it's a difficult one, but I think if you want the craft to grow, you've got to make that choice and perhaps step down for a moment on the personal sculptor's role.

Dimitri Gerakaris
USA
We see the threads of Lindau and Hereford weaving together. Whether we know it or not, it is not impossible that we now stand on the crest of a rather momentous watershed. If one looks at the Lindau catalogue, it does not take long to identify national trends and schools of blacksmithing. Perhaps, now that we are breaking out of our national insularity with these international events, we may see some of these trends and ideas spilling over national boundaries to be shared by all as we leave our provincialism behind us. [Victor Margrie: That's good — I hope it's true.]

Hermann Gradinger
Germany
I would like to respectfully disagree with Dimitri. I think an attempt to internationalize blacksmithing style would be horrible — if you couldn't recognize a national identity in work, or even parts of that country. For example, compare northern and southern Germany — the works of Achim Kühn and Manfred Bergmeister. It's wonderful to see places marked by a particular landscape and see that reflected in the work.

Dimitri Gerakaris
USA
I'm not suggesting a wholesale homogenization of our styles, which are delineated not only by our nations and regions, but ultimately by our individuality. But if we look around, I think we'll see nobody here from Nigeria, India or Guatemala. We are part of a common community — be it known as the developed, over-developed, whatever society. We have this bond and we have much in common that we can share.

Richard Quinnell
England
I'd like to say about losing our regional distinctions, I don't think this conference would have taken place at all if it weren't for the great reviving influence that visits to Germany and the United States, and a realization of what was going on in those countries, have had on the British smiths in the last few years. I think that British smithing would have remained in the doldrums were it not for the influence of the design being developed in other countries and I think that we can probably return some of that stimulus back with interest.

Stuart Hill
England
I don't think there is any danger that the conference will make us all become amorphous. I think it's inevitable that we work in our own way, but the fact that we get stimuli from other people cannot but raise the quality of the craft as a whole. And, if I may say, it's those who give the most that gain the most. [applause]

Mack Beal
USA
I don't think that anyone should feel that having come to this wonderful gathering will have an immediate impact on the relationship with your clients. It will be a very subtle thing which will be a thread through the rest of your entire creative fabric in life. You will think about this wonderful gathering for years to come. [applause]
A Forge to Outfox Clinkers
Simon Benetton
Treviso, Italy

The following was divulged by Simon Benetton at the ABANA-CBA Conference: We use a forge that prevents a clinker from forming between the blast and the iron, and any foundry can cast one for you if you only make a pattern: It is simply a thick, cast iron dome with slots in it. The clinker-forming material sinks below the level of the slots, and at the end of each day's work, you merely pull out the day's "clinker doughnut." It's very simple.

Collaring Material
Rolando DeLeon
Santa Fe, New Mexico

In our shop we've used strap metal of various sizes for collars and it always works very well and looks well too, as in sketch "A." A good material too, is half-round stock, when it is available; the effect as a collar is very nice, as shown in sketch "B."

Another stock that is quick and easy as a collaring material is angle iron; try ½" × ½" × ½" as in sketch "C." You can also lay that same angle iron on the anvil as in sketch "D" and hammer it cold until it flattens a bit and then use it to collar as in sketch "E."

Channel iron can also be used with a really nice result. Try 1" × ½" × ½", which should be heated in the forge and then flattened or buckled. A piece of ⅜" round is used by laying it on top and striking with the hammer as in sketch "F." Sketch "G" shows the effect you get.
Self-Closing Hinge
Manfred Bergmeister
Ebersberg bei München, West Germany

The self-closing mechanism of the hinge on this gate exhibited at the International Exhibition of Wrought Ironwork and Sculptures is self-explanatory.

Photos by
Mary Gerakaris

Top & Bottom Tool
L.G. Love
Wiltshire, England

Various designs for top and bottom tool holders that fit into an anvil's hardy hole have been seen before in this magazine (June '79, p. 35; Sept. '79, p. 7). We thought you might enjoy this one used by Laurence G. Love of Wiltshire, England at the International Conference and Workshop at Hereford. This design has been refined over the past 30 years by the blacksmithing branch of the British Council for Small Industries in Rural Areas (CoSIRA) under the inspired guidance of Mr. Tommy Tucker. L.G. Love, now Wrought Iron Officer with CoSIRA, is seen here putting the finishing touches on an 18th Century-type acanthus leaf which he veined using this tool.

Dressing an Anvil Horn
Bill Planzer
Chattanooga, Tennessee

There are a lot of ways to re-draw the point on the horn of an anvil that needs fixing. One easy way to do the job by yourself is like this . . . Heat the end of the horn in your coal forge. Set the anvil on the floor so it sits on the heel and that side of the anvil base — the horn is now sticking straight up. Back up the tip of the horn with as heavy a sledge as you have and draw out the point with your hand hammer.

lever to raise tool

pin through top tool and slots in pipe to maintain alignment

round pipe set into square pipe

pin to keep spring on

set screw to hold bottom tool
Repoussé Stock

Serge Pascal
Rosnay, France

The leading force in the massive restoration of the ironwork at the Place Stanislas at Nancy, France (an undertaking begun in 1978 which will continue, with a crew of 4 until 1982), Serge Pascal demonstrated repoussé work of the most delicate nature at the International Conference and Workshop in England.

First dishing the stock from the back into a wood block into which he had carved smooth concavities (ill. 1), Serge then turned the material over and worked it from the front side over a stake held in the vice (ill. 2). It suddenly occurred to all who observed the demonstration that Serge never heated the material — it was not even annealed before the operation began. Quizzed about this, Serge smiled and replied: This 20ga. sheet stock we use is a new miracle steel that is so soft it need not be annealed. Therefore, we have no scaling of the surface. Where does it come from? — Ohio, U.S.A! It is ARMCO blackplate 1005 steel which was developed for deep drawing and use in ceramic coating applications. Illustration 3 shows three stages of completion of the same leaf. The remaining photos show, firstly, some of the repoussé work having taken form as an urn to be gilded and painted for the restoration and, secondly, part of the ironwork at Place Stanislas already restored. The one comment Serge constantly repeated was, “Anyone who is patient can do this work.”
Forging Bronze

E.A. Chase  
Santa Cruz, California

At the ABANA-CBA Conference, E.A. Chase forged a number of greatly varied belt buckles, all from similar ¼” round pieces of low fuming bronze rod. This was cited as a very satisfactory material for pieces of this small size. It can be heated by torch as it is forged and bended and welded as well. When larger work is to be done, the inavailability of larger sizes of this material leads to the use of other non-ferrous materials.

Chase stated the importance of staying away from free machining alloys, which contain lead. Silicon Bronze #521, which is 98% copper, works very much like iron. This is one of the few bronzes which can actually be worked a little above a dull red without crumbling. It exhibits a somewhat browner color than the yellower alternative of Naval Brass. The latter material works very well, but tends to de-zincify at the upper end of its working range. The actual working of these materials is best done in a gas forge between 1500-1600°F and welding is done with a TIG rod.

Two buckles on either side of a rod like that from which they were formed.

A multitude of buckles by E.A. Chase — all evolved from the same size and shape rod — an exhibition at the ABANA-CBA Conference Exhibition.

Forging Aluminum

Hermann Gradinger  
Mainz-Gonsenheim,  
West Germany

These side panels of 2mm. thick (.0787 in.) forged aluminum slide together to protect this entry of the Landeszentral Bank of Rheinland-Pfalz, Mainz, Germany. Hermann Gradinger, designer and maker of this 2.5 × 4.7 m. (8.2 × 15.4 ft) entry, was a participant at the International Conference and Workshop in England from where he sent these tips on forging aluminum sheet as a special present to the readers of The Anvil's Ring.

This 2mm. thick aluminum sheet was worked over sandbags covered with leather. The desired pattern was drawn on the sheet and first roughed out with a wooden mallet. The shape was later refined with a metal hammer. But it was important to periodically anneal the aluminum. The need for this is signalled by both the stiffer feeling of the metal being worked and the sound — when it begins to ring, it is time to anneal. This is done by heating the aluminum with the torch until it is hot enough that a piece of pine touched to it will leave a brown mark (this is also the signal for the correct forging heat for a bar of aluminum). All fabrication of the panels and the door pulls was with TIG argon welding.

To finish the aluminum, it was brushed with steel wool (a fine brushing will also do) after which it was painted with a thin mat paint. When the paint was almost, but not quite, dry, the surface was gone over again with a fine steel wool. After the surface dried and was cleaned of the steel wool particles, a coating of auto wax was finally applied.
The Stieglert Globe

demonstrated by Dorothy Stieglert
of Rochester Washington at the ABANA-CBA Conference

I've been asked to send this in for you all to share. I hope I see hundreds of them used before long!

1. Four pieces square or round 1/4" bar, 9 3/4" long. Twist square and remove corners.

2. Weld this bundle 1" from each end in your fire. Try not to reduce any of the steel.

3. Heat and twist this group at least one full turn, going one-quarter turn past “flush.” Straighten with mallet and reheat and untwist one-quarter turn. Make sure everything is straight and level.

4. Take 8 pieces of square or round 1/4" bar, 10 3/4" long. Twist up square and take corners off.

5. Bend to this shape:
I made a jig using coil spring.

6. Place these last bars evenly around the first set and tack to globe. Arc weld only on butt end, not the sides. (I tried initially to do this by the help of an arc welder... ever tried to weld up a porridge pine?) As you touch each end with the arc, it will reduce to the length of the central core and they will be flush on the ends.

7. Forge weld both ends of this group. Watch carefully so you don't overheat the outside and under heat the core. Remember you're welding 12 pieces together. Take it up slowly.

8. After it's evenly welded on both ends, take a nice slow, even heat over the entire globe, center, too. Place one end in the vice and with a twist bar on the other, push in and twist the opposite direction of the central core. The inside will open and the outside will close, making a reverse globe inside a globe. Try it, you'll love it!

Demonstration of the Stieglert Globe at the ABANA-CBA Conference in Santa Cruz.

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Power Hammer Approach
Dimitri Gerakaris
North Canaan, New Hampshire

These 10 × 11 ft. grilles for the renovation of a bank built in 1912 were done in a traditional style to be harmonious with the environment; yet, there was room for some play in the cresting to introduce some plasticity more common to the work of today than that of the previous era. Here's how it was done:

Each cresting “spear” was begun from 1 inch square bar forged to the shape in the accompanying illustration. They were then heated to a very high forging heat and placed with an edge of the spear running in the groove formed by a piece of ½” round bar folded back on itself into a “U” (this was, of course, forged ahead of time and forge welded to a handle). Hammered thus under the power hammer, the edge was pressed into the groove to form the raised, central part of the spear, and the rest was fuller out to each side, leaving a concavity to the center of each half, and a raised lip along the edge.

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Nickel Damascus

Daryl Meier
Carbondale, Illinois

At the ABANA-CBA Conference, Daryl Meier demonstrated the new techniques he developed for the making of Damascus Steel involving the use of nickel as one of the elements. Not only do these techniques make possible a Damascus material of stunning pattern contrast, but they provide as well the means by which the making of a more conventional Damascus material might be better controlled. Here are some of the highlights:

By this method, Damascus steel is made of ordinary W1 (1% carbon steel) and 203E nickel iron using two \( \frac{1}{2} \times 1 \times 3 \) inch pieces of each. Rather than dome the surface of each bar to act as a slag excluding scarf (see The Anvil’s Ring, June ’79, pp. 19-23, “Damascus Steel” by James Fleming), each piece is run on a milling machine to flatten it as much as possible; it is thereafter run on the side of a stone grinder to remove the milling marks, run on a belt grinder to remove the stone grinder marks and then rubbed by “wet-or-dry” paper on a plate: the object is to make the steel and nickel so smooth, that they will fit together so well as to exclude as much oxygen and other materials as possible from occurring between them. The pieces are then degreased with an alcohol wash and pinched together as tightly as possible in a vice and welded together all around with 6013 rod.

The joined pieces now can be welded onto a rod for the convenience of handling and heated for welding in a specially prepared fire. This fire is started and then made into a furnace by covering and packing wet coal fines all around except for an orifice formed of fire brick into which prepared coke can be fed (see photo above). Whether you buy or make your own coke, it’s imperative to use coke made of very low sulfur coal to prevent sulfur embrittlement of the Damascus. While slowly heating the billet, if the layers run perpendicular to the bottom of the fire, rather than lying flat, you can better insure a more even heat distribution. Although flux is not now essential due to the careful preparation, it will be an aid to ascertain the welding point; this is much lower than that of normal forge-welding due to (1) the material preparation, and (2) the use of greater welding force under the power hammer. The heat at which “Crescent” welding flux turns runny is the proper welding heat. When welding under a power hammer, it is best that the radius of the top and bottom dies be the same; otherwise, the top and bottom of the billet will stretch at an uneven rate causing internal stresses.

After each welding, the materials are prepared as initially for restacking and “zipping up.” This is a most laborious process, but it produces an almost foolproof result. The end product is not only most impressive to look at, it will — even after annealing in slack lime — require 1 molybdenum blade and 8 pounds of elbow grease to cut through a very small piece (hint: use a cutoff saw and a very good quality blade).

Daryl concluded, “You can work from the traditional point of view and use the traditional techniques and produce results similar to that of the ancients and/or you can meld old concepts with modern materials and techniques to produce a contemporary piece — there is room for at least a billion experiments.”
Corn Cob Sprinkler
Evert A. Johnson
Murphyboro, Illinois

I have a modest device you might find somewhat amusing. I hesitate to say that I invented it because, knowing blacksmiths, someone has probably beaten me to the punch several centuries ago. I have enclosed a modest sketch of the “Corn Cob Sprinkler.” I'm sure the corn cob has had many uses over the years — some proverbial, ecological, scatological and practical. I found myself heating pretty short on small pieces of iron that I preferred to hand-hold instead of using tongs. To cool the holding part, the use of the usual sprinkling can is too uncontrollable, but the corn cob is much less messy and it is precise. Held horizontally, it holds quite a bit of water; and when tipped downward, it releases a small flow — the amount depending on the angle of inclination.

I'd like to dedicate the announcement of my "invention" to Tom Bredlow in appreciation for his ongoing series, "Burbles From the Slack Tub."

Blacksmith’s Helper
Carol Sakowski
Barneveld, Wisconsin

Francis Whitaker explained that in a one-man shop, work can be done without a striker by the use of a "blacksmith's helper" (a stand of adjustable height). The stock being worked on the anvil is arranged with its other end on the helper; between the two is a weighted chain which holds the stock in place.

Drawing Out Pipe
Beau Hickory
San Francisco, California

While demonstrating at the ABANA-CBA Conference, Beau Hickory showed how easily thin pipe can be forged to a taper if the walls at the end are but first peened in a little.

Pipe Joint
Stuart Hill
Suffolk, England

Fascinated by the holding power of hot pipe into which cold stock is hammered, (ref. p. 41, June '80) Stu Hill showed this very solid joint of square pipe and round bar at the International Conference and Workshop in England.

Power Forging Pipe
Manfred Bredohl
Aachen, West Germany

Pipe can also be forged. Here, demonstrating at the International Conference and Workshop in England, Manfred Bredohl and Johan Krieng forge grooves around a large section of pipe for a beaded effect. Note that Manfred holds on to the left end with tongs while Johan’s handle is temporarily welded into place for stability. (No mandrel was inserted through the pipe.)
Corrosion Prevention and Control
Geometric Factors of Proper Design

K.O. Watkins
Clwyd, Wales

Ken Watkins, who spoke at the International Conference and Workshop in England, is the Principle Products Application Engineer in the Corrosion and Coated Products Advisory Service of the British Steel Corporation. The following information comes from his presentation at the conference and information he distributed by the British Steel Corporation:

Corrosion of steel takes place when moisture and oxygen are present together on its surface. If pollutants such as sulphur dioxide (SO₂) or chlorine (Cl) are also present as well, the rate of corrosion increases and this is why corrosion rates are always higher in industrial and coastal areas than they are in rural. These problems can be overcome, however, or at least greatly reduced, by using one or more of the following preventative methods: 1) Alter the environment e.g. inhibitors, air-conditioning. 2) Alloying elements e.g. low alloy and stainless steel. 3) Electrical methods e.g. metal coating, galvanizing. 4) Barrier coatings e.g. paint. 5) Attention to design.

It is at the design stage that the prevention of corrosion should begin. At the drawing board stage, full attention can be paid to the avoidance of details that may lead to corrosion or interfere with the application and maintenance of protective coatings.

Consideration must be given to the materials of construction, the methods of fabrication and assembly, and the operating conditions. The relation between geometrical design and corrosion is particularly important. Many service failures through corrosion would, in fact, not have arisen but for faulty design.

Faulty geometrical design is a major factor in the corrosion of ferrous metals. A design may be sound from the structural and aesthetic points of view, but if it incorporates features that tend to promote corrosion, then early failure or unnecessary maintenance costs will have to be met throughout the life of the article, be it a bridge or a waste bin.

Some of the more important points that should be observed are noted below. Where these features cannot be avoided, extra protection should be provided.

I. Features should be arranged so that the trapping of moisture and dirt is discouraged. Where this is not practicable, consideration should be given to provision of drainage holes; these should be of sufficient diameter and placed in such a way that all moisture is drained away.

II. Crevices should be avoided. They allow moisture and dirt to be trapped with a resultant increase in corrosion. If crevices either cannot be avoided or are present on an existing structure, they can often be filled by welding or by using a filler or mastic (see Fig. 1).

III. Joints and fastenings should be arranged to give clean uninterrupted lines. Welds are generally preferable to bolted joints, and butt welds to lap welds. If lap joints have to be used, then appropriate welding or filling may be necessary to avoid the entrapment of moisture and dirt.

IV. Condensation should be reduced by allowing free circulation of air, or by air-conditioning. Storage tanks should be raised from the ground to allow air circulation and access for maintenance (see Fig. 2).

V. All members should be placed so that access is provided for future maintenance, or so thoroughly protected that no maintenance will be required for the life of the equipment or structure.

VI. Where practicable, rounded contours and corners are preferable to angles, which are liable to mechanical damage at edges, and are difficult to coat evenly. Tubular sections could often advantageously replace I or H sections. Some rectangular tube has corners sufficiently rounded to allow even coating of the edges (see Fig. 3).

VII. Corrosion is often particularly pronounced on sheltered surfaces, such as those under the eaves of buildings where the evaporation of moisture is retarded. Design features of this kind should either be avoided or additional protection provided at the sheltered areas.

VIII. Steel should not be exposed to contact with absorbent materials and care must be exercised when using steel in contact with wood. Not only is wood absorbent, but the vapours from it may be corrosive in enclosed spaces (see Fig. 4).
IX. Large box-section girders can be enclosed by welding in bulkheads near the ends. The welds must not have gaps, or condensation may occur within the box-section.

X. Features that allow moisture to drip to other parts of a structure should be avoided. Particular attention should be paid to the siting of drainage holes.

XI. Where steel members are embedded in concrete, particular attention should be paid to the position of entry (see Fig. 5).

**Fig. 5 — Avoidance of crevices**

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**Stock Sling**

Serge Marchal
Nimes, France

While working heavy pieces of stock at the International Conference and Workshop in England, Serge Marchal slung the iron at its center of gravity with this handy hook which works much better than tongs. (NOTE: He always hung the hook from the lip of the forge by the same end while taking a heat or forging so that the heated end would not later be accidentally grasped.)

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**Gate Bearing Lubrication**

Alex Klahm
Honolulu, Hawaii

We recently did a repair job on the large driveway gates of the Bishop Museum which had to be re-installed. The gates weigh about 1500 lbs. each and the above sketch shows the detail of the lower pin hinges I made up. By feeding the grease in from the bottom, water and dirt can be expelled. The gates work great.

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**Compound Curve**

Paul Zimmerman
Pliezhausen, West Germany

At the International Conference and Workshop in England, Paul Zimmerman showed the shape he forged before bending it to the form that appeared in his grilles at the Lindau International Exhibition.

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**Power Hammer Fullering**

German Bergmeister
Ebersberg bei München, West Germany

German Bergmeister demonstrates what a top and bottom fuller on a power hammer (that does not flop around) and a steady hand can do at the International Conference and Workshop in England.
Hammer Control

Donald Streeter
Iona, New Jersey

This approach to hammer control is reprinted directly from Professional Smithing by Donald Streeter © 1980 with the kind permission also of Charles Scribner's Sons, Publishers.

Hammer Control

Most smiths will, out of their experience, find what is for them the best grip to use in swinging the hammer. But since this book deals with hand forging in rather exact ways, the use of the hand hammer should be considered as something more than wielding a chunk of steel on the end of a club. It is because as much time will be taken to heat the iron as will remain in the heat to forge it that “strike while the iron is hot” has any meaning at all. Therefore, a great part of the smith’s dexterity lies in his ability to strike the right kinds of blows, in the right places, as quickly as possible.

One key to hammer control is the position of the thumb on the handle. This is not surprising, considering all the other fields of manual skill where rules of thumb literally apply. Whether it is a baseball bat, a golf club, or whatever, the thumb position often dictates the accuracy of the swing. In filing a flat surface, the thumb is placed atop the handle in order to avoid having to control the natural tendency of the wrist to assume that position when otherwise held.

Two basic blows are used in drawing hot iron: that which produces a flat surface parallel to the anvil face, and that which forms a surface at some angle to it. Since it is the face of the hammer which makes the forged plane, accuracy consists of controlling its angle in relation to the anvil top as the hammer descends vertically.

This principle can be demonstrated in a simple forging exercise, that of forging a point on a square bar. Consider that the anvil face is a flat plane of
fixed nature. The hammer face is a plane that can assume any angle from horizontal to vertical, and in such position can be driven down into or on hot iron. Logically, if the hammer face is parallel to that of the anvil, the blow will produce a flat surface. However, if the hammer is held at any other angle, and the hot iron is flat on the anvil, the blow will forge a dent or bevel, depending on the placement of the blow. The choice between a flat or angle blow can be determined by the position of the thumb. With the thumb held on the top of the handle, and the wrist held naturally, untwisted, a flat surface will result from a vertical blow. With the thumb moved to either side of the handle, any chosen angle can be forged with equal ease and control.

To forge a point, then, the hammer is held at an angle which is one half of the included angle of the proposed point, the anvil producing the other half, and the bar raised on its end so its axis bisects the angle between them. Vertical blows delivered with one-quarter turns back and forth between them quickly will forge a point at the center of the bar. Because the wrist always holds its natural position, angles remain constant without strain.

This is not to say that this is the only proper way to hold the hammer. It is perfectly possible to produce fine work with all fingers and thumb wrapped around the hammer handle. To roughly reduce stock no such refinement is necessary. But for sustained production of accurate work it is a habit worth acquiring.
The Hand Forged Knife

an introduction to the working of modern tool steels
by Karl Schroen

Karl Schroen of Sebastopol, California is a professional cutler who has been making knives since 1949. He learned the trade from his father. A grandfather and two great-grandfathers were also smiths. In the March 1979 issue of The Anvil's Ring, Karl explained he was writing a book on knife making based on his over 10 years experience of developing the forging and heat-treating techniques for all categories of modern alloy tool steels.

That project now complete, Karl has decided it would reach the largest audience and have the greatest impact by appearing in serialized form in The Anvil's Ring. We now take great pleasure in presenting you the first installment of that work and on behalf of the readers, thank Karl Schroen for his great generosity. © 1980, Karl Schroen (no part of this may be reproduced without permission of the author).

BACKGROUND

I learned the fundamentals of blacksmithing from my father and was strongly motivated by stories told by him of my grandfather and great-grandfathers, two of whom had learned their skills in Germany and emigrated to Michigan where iron and steel were in great abundance.

The first family shop that I saw was located in Saline, Michigan when in 1949 I visited there from California. The blacksmith shop was part of a larger building that also housed a hardware store. The shop was very large, having three forges and five anvils. From this shop, I am told that everything from plows to scissors were made and repaired. The hardware store served as an outlet for the products of the shop.

Here, as a youth, my father learned the elements of blacksmithing. He started by cleaning out the forges and building new fires. He later began to handle such tasks as filing and sawing hot and cold iron.

As the Industrial Revolution gradually replaced the need for hand work, dad was encouraged to enter college. Quite naturally, he entered the field of mechanical engineering and received a degree from the University of Michigan in 1924.

Jumping a span of thirty years, in 1954, I entered college at the University of California at Davis. With Sputnik spinning around, I set out to get a job where I did not have to work with my hands. For some years, I tried to fit into the American Dream. I found, however, that the die had been cast long before and finally in the late 60's I stopped trying to fit into the whole scene. I decided to combine my early training in blacksmithing with a background in science. The result has lead me straight into the field that is the subject for this study.

I have often thought that all those years spent were merely a preparation for my present endeavor. In any case, I do not think that I would have been drawn into this type of enjoyable life without the two threads of my past coming together.

INTRODUCTION

Nowadays, if you ask most people what a blacksmith is, they invariably say horseshoer. If you ask people what a cutler is, you get a blank look. In the space of less than one hundred years, an entire group of people has become obscured to the point of almost non-existence.
Say we were walking down the street of Anytown USA in the year of 1879. One of the most prominent buildings in town would be the blacksmith shop. If the smith was trained formally i.e. in an apprentice program, he might be skilled in both of the specialty forms of the blacksmith's art. One day he may work as a farrier, shoeing horses, and the next, making knives as a cutler all day.

If Anytown was of a large size, the blacksmith might list himself in the town register as a cutler. His products might include table knives, butcher-knives, swords, sickles, scythes, lancets, buttons and buckles, cork-screws, tailors shears, dentist equipment, and many other tools.

If Anytown, on the other hand, was small in size, the smith might have to perform any and all tasks of the trade. Such was the condition of one of my great grandfathers, John Hauser, a German trained blacksmith who specialized in making watch parts. When he moved to Saline, Michigan in 1870, he found that it was impossible to carry on with his former trade. He soon became a general blacksmith in that small town.

The shop itself was one large room with a dirt floor and only one window. In the middle stood a brick forge with a long leather bellows attached to it. My father said he watched for hours as the bellows pumped air through the chunks of hot coal to heat the iron or steel in preparation to hitting it with a hammer. The large anvil stood on a stump next to the forge acting as the forming table to receive the blows of the hammer as it shaped the hot metal. Aside from the anvil, which was cast in a foundry, all of the other tools in the shop were made by John Hauser. These included a wide assortment of tongs, hammers, and many other tools of the trade.

The iron used in the shop came from the iron rich ore dug from the mines in the upper part of Michigan. I have a hammer made by John Hauser from iron and steel that was smelted in his shop. Because steel was so hard to make with their limited equipment, they used it sparingly.

Looking closely at the hammer we see the back is made of wrought iron. Wrought iron is made by infusing relatively pure iron with iron silicate. It is easy to work and contains a small amount of carbon. So small an amount that it will not harden. For that reason, John hammer-welded a piece of steel onto the face of the hammer. Unlike the wrought iron with its siliceous slag fibers, steel contains more carbon and no slag. It is easy to work and will harden. To do that, after he was through welding the two metals together, John reheated the steel surface and dipped it into a bucket of water.

In the corner of the shop was a large cast iron stove. Cast iron is iron with lots of carbon in it (2-4%). The main difference then in the composition of wrought iron, steel and cast iron is the amount of carbon each contains — wrought iron has the least and cast iron has the most.

Steel is an alloy of iron and carbon. An alloy is a substance made of two or more metals — and/or — one or more nonmetallic elements. Carbon and silicon are examples of non-metal alloying elements.

The iron to make the steel no longer comes from the once iron-rich upper Michigan mines. Now, low grade ore is re-processed to make steel. The carbon comes from coal that has been partly burned and made into coke.

The shop that I now have is quite different than that of my great grandfather's of 80 years ago. I specialize in knifemaking. I do, however, still use a coal forge, hammers, anvil, and tongs. This equipment will be described later; but first I will describe the materials that I use.

For the utmost in purity, strength, and reliability, tool steel today is produced in a type of electric furnace to which a vacuum is connected.

WHAT IS STEEL?

If we were to take a piece of steel from the scrap pile behind my great-grandfather's shop and in some way take it apart, we would find that it was mostly made of iron. The steel to which he had access was rather simple. The only intentional addition to the iron was carbon. The carbon is not just floating around in the iron but is actually hooked to the iron in a substance called a compound. The name of this compound is cementite (Fe₃C) (fig. a).

Another way of looking at it is to compare the weights of each element in the compound. It is easy to feel the difference in weight between a piece of charcoal (which is almost pure carbon) and an identical piece of iron. The iron is much heavier. In fact, the iron weighs almost five times as much as the carbon. We know that carbon weighs 12 and iron weighs 56, when compared to hydrogen which weighs 1.

In cementite, for each 12 pounds of carbon, you have to add 168 pounds of iron (3 x 56 = 168). In other words, a little carbon goes a long way. Too little carbon and you have wrought iron, too much and you have cast iron.

One way to see this relationship of carbon to iron is to fill a gallon glass jar with water. Now add one drop of ink. Soon the ink will work its way to all parts of the jar. It takes a very small amount of ink to dis-color the water just as it takes a small amount of carbon to change the iron to steel. Carbon is by far the most important alloy in steel.

All modern steels have, in addition to carbon, other elements added to the iron. Even what is called a straight carbon steel has the elements silicon and manganese added. A straight carbon steel may be low in carbon (0.10%), medium (0.30%) or high in carbon (0.60%) and more. Knives are made of high carbon steel of very high quality. This is the type of steel that I will discuss in this study.

Tool steel as used here is high quality, high carbon steel that is used to make tools. It is a crystalline solid that, when heated to a certain temperature, changes form; the solid crystals of iron change to (continued on next page)
form a solid solution. The room temperature iron, called ferrite, starts to come together with the iron carbide, called cementite, at 1335°F to form the solid solution called austenite. At this temperature, the cementite abruptly begins to dissolve in the iron.

In other words when you stick a piece of steel in the forge and let it turn red then orange and start to hit it, you are hitting steel in its austenite phase. If you continue to heat the steel to a yellow color and beyond to the white incandescent colors, the iron in the steel changes crystalline form again as you watch it melt. Taking the steel out of the fire and letting it cool down once again, the steel changes back to ferrite and cementite.

Steel then is a form of iron to which a small quantity of carbon is added. All modern tool steels contain, in addition to carbon, other alloy elements which alter the steel in specific ways: 1. produce greater strength in large sections; 2. provide less distortion in the hardening process; 3. add greater abrasion resistance to the steel; 4. provide higher toughness and at the same hardness levels when the pieces are small; 5. retain strength at high temperatures.

Understanding the fundamental metallurgy of iron and steel is, I believe, essential for the blacksmith interested in working with modern tool steel. The brief explanation that I have written is intended to introduce the subject in a practical way. I will continue to relate techniques which have been built upon a thorough exploration of theories and facts gathered over the years.

FORGING

Forging of the steel is very important because it not only shapes the material but refines the grain structure. When enough steel crystals are combined to become visible, they appear as small sand-like particles. The size of these grains is dependent on temperature, steel composition, and mechanical (hammering) forces. The grains increase in size with heat; thus during most of the early hammering, the size of the grains is large. As the steel is forged, the size of the bar is changed and, in the case of a knife blade, becomes thinner. As this happens, it requires less heat and lighter hammering to effect a change in the bar shape. The grains meanwhile are aligning themselves into parallel rows in the direction that they are being forged. (fig. b)

The final refinement of the grain size is referred to as "packing" and is done by the smith at the same time that the final shape of the bar is finished. Packing the steel is very important and involves hammering the steel at a dull red color for a long period of time. Grain refinement in parallel rows is essential for strong, high quality cutting edges. The smaller the grain size, the stronger the material. (fig. c)

ANNEALING

The forging of the tool steel in order to produce a fine grain size, has at the same time created great stress in the bar. The various methods used to relieve stress are collectively known as annealing. There are many types of annealing. I will discuss one of those kinds called spheroidize annealing that best describes what is taking place inside the bar of tool steel. It may be added, that as the stress is relieved in the steel, the bar becomes softer and more easily shaped with a file, grinder or drill.

The mechanism for spheroidize annealing involves the blacksmith's application of just the right amount of heat at the proper time. The spheres are small particles of carbide that have not yet dissolved in the iron to form austenite. These undissolved carbide spheres form the center on which the smith hopes to add more carbides so that the bar will be filled with these spheroidite structures interspersed in a background of soft pearlite. Pearlite is the soft crystalline structure of the steel at a temperature range of 1000°F-1335°F just before it changes to austenite. 100% pearlite does not machine or harden well, so the smith uses undissolved carbides in the pearlite to open it up and become a more desirable material.
Each time the bar is reheated to the dull red to red range (1000°-1335°F) and then cooled slowly, more spheroidite is formed. Thus, combining the packing operation, which disperses the carbides, with the dull to red heating produces a very sound piece of tool steel. I continue the heating and cooling cycle for some time after the packing has been completed, then bury the bar in a prewarmed trough of sand and spent coke. The bar is thus ready to be ground to shape, sanded, drilled or tapped and finally hardened. (fig. d)

HARDENING

The hardening of high carbon tool steel is the process by which austenite is converted to a needlelike crystalline form called martensite. Martensite is the desired end product of the hardening process. It forms directly from austenite. The amount of martensite formed is directly related to the amount of carbon that the steel contains. The more carbon — the more martensite.

In plain carbon tool steel, martensite starts to form from rapidly cooled austenite at about 400°F. The temperature of the austenite at the time of cooling is 1500°F. The steel is quickly cooled in order to avoid soft or in otherwise undesirable structures in the steel that form at temperatures between 400°F and 1500°F. The first undesirable structure to form below 1500°F is pearlite. At 1335°F pearlite appears, under the microscope, as wavy lines that are arranged in parallel rows. This structure lasts until about 1000°F at which time it starts to change to a feather structure called bainite. Bainite changes gradually as the temperature is lowered and near 400°F has needlelike spines similar to martensite. This lower temperature bainite is the only desirable crystalline structure besides martensite that should be present in the hardened steel. Bainite is desirable because it lends toughness to the hard martensite.

There are two ways of avoiding the temperature ranges that produce undesirable crystalline forms. The first and most simple is to lower the temperature of the steel from 1500°F to 400°F so quickly that pearlite and other undesirable products do not have time to form. This method is the traditional water quench. Other quench liquids employed to drastically lower the temperature are brine (salt water) and various types of oils. The cooling rates vary from fastest in brine to slowest in oil. (note: I use Imperial "S" quenching oil, which is distributed by O.l. King, Div. of Far Best Corp., 640 Gilman St., Berkeley, Ca.) This oil cools fast enough to harden the steel but avoids the sudden changes of water or brine which can cause the steel to crack.

A second method for transforming austenite to martensite is used in modern tool steels. This relies on the addition of alloys such as chromium and molybdenum, to name two, that stabilize the austenite and thus carry it to lower temperatures. If austenite can be held, without converting to pearlite, then the rapid, drastic quench can be eliminated. This is exactly what happens in those steels with proper amounts of the alloys added. The austenite is carried to a lower temperature and finally, in less than one millionth of a second, shears off to form martensite. The term commonly applied to this process is "Hardenability." Certain steels, to be discussed later, are alloyed in such a way that they will harden in still air after being raised to their hardening temperature, i.e. Air Hardening Steel.

The term hardenability also implies another interesting relationship that happens in the hardening process. Simple high carbon tool steels with only small amounts of silicon and manganese in them will not harden all the way through in a water quench if their diameter is larger than about 1½". But, for example, if a small amount of molybdenum is added, the steel will harden all the way through.

I have successfully hardened many kinds of water, oil, and air hardening steels in an open forge fire. Details will follow later.

TEMPERING

As with the forging operation, the hardening of the steel leaves the steel in a very stressed condition. For this reason, steps are taken to relieve that tension and, at the same time, retain a maximum amount of hardness. If the knife blade is not tempered immediately after hardening, the hard brittle steel will shatter like glass if subjected to a sudden shock or blow.

Tempering is the reheating of the hardened steel to a temperature below the hardening temperature that partly softens the steel. Along with this softening, the internal stresses are relieved.

The tempering process has been complicated somewhat through the use of modern highly alloyed steels. These steels have so many complex carbide systems in them that they actually create new, smaller grains when heated beyond the normal tempering range of water hardening steel, i.e. 300-400°F. These new carbides form very actively from 800-1000°F and increase the initial hardness of the steel a great deal. Since they are new, they too require stress relief. So with these steels, it is always wise to double temper after hardening.

The tempering techniques that a blacksmith acquires rely mainly on his ability to develop to a high degree of intuitive sensitivity to the steel and constant practice.

There are no incandescent colors to go by because the steel does not get hot enough to show them at the tempering temperature. The oxide colors, those colors that are caused when the shiny steel on heating is changed, are only partly reliable. I say partly because there is a time lag between the appearance of the oxide and the actual temperature of the steel. This time lag gets longer as the temperature is increased.

I have trained myself to use a series of sharp and dull files to judge the hardness that I desire.

SUMMARY

This installment has introduced you to the world of the toolsmith. I have used examples from my family to illustrate some facts about the range of work that can be done. The basic metallurgy of tool steel was used to explain what tool steel is and some important things about its nature. The next installment will deal with the tools of the blacksmith and how to care for and maintain them.

(continued on next page)
This chart illustrates the four basic processes necessary to make a knife from high carbon tool steel: forging is necessary to shape the steel; annealing to relieve the stress created by forging; hardening and tempering respectively make the steel hard and then tough.

Forged steel is of two parts: Over half of the steel is iron or ferrite; carbon is present as iron carbide or cementite. On heating, steel forms austenite at 1333°F. This is the non-magnetic steel the smith hammers on.

Slowly cooled after forging, the steel changes to a soft crystalline form, pearlite (1000°F). Bainite forms at about 800°F. The steel returns to ferrite and cementite at room temperature.

Annealing softens the steel. The diagram shows the softest form of steel is formed at temperatures above and below the critical temperature due to the large carbides called spherodite embedded in a background of pearlite. This soft, open structure is retained at room temperature. Also the hardening of high carbon tool steel involves the change from austenite to martensite, which is the type of crystal that makes steel hard. In steels of lower alloy content, i.e. W-1, O-1, hardening requires the drastic lowering of steel temperature in order to avoid the temperatures where pearlite is formed. Steels with higher alloy content skip the pearlite zone by slowing the cooling rate on the way to forming martensite. This time lengthening by alloys is known as hardenability. High carbon, high alloy steels sometimes require sub-zero quenching because they retain a large amount of austenite at room temperature (up to 30%). This room temperature austenite is very unstable, changing to martensite so quickly that the steel will warp and crack. The only way to avoid this non-uniform change is to eliminate it as soon as possible after the steel reaches room temperature. I use acetone and dry ice to lower the temperature to -70°F. Once the steel is hard, it is also brittle. Brittleness is taken away from the steel by tempering. Lower alloy high carbon steels require tempering temperatures up to 450°F to soften. Steels of higher alloy content have larger quantities of brittle carbides that require higher tempering temperatures, i.e. 1000°F.

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The Anvil's Ring
The September, 1980 issue of The Anvil's Ring was comprised of a collection of Blacksmith plates from the Encyclopedie of Diderot and D'alembert. Here, to lighten your task of understanding the prints, is the first in a series of translations by James L. Kirkland © 1980 of Panama City, Florida. These translations appear through the courtesy of Mr. Kirkland and may not be reproduced without his permission. He furthermore notes: "I strive to do accurate translating and do considerable research to make it as meaningful and accurate as possible. I will make mistakes, or, sometimes I may not be able to find the answer and will admit that I can't. I solicit criticism from readers."

TAILLANDIER

Method for Making Anvils

The top of this Plate shows a workshop of a taillandier where several workmen are occupied at diverse work of this art. The one at a is working the bellows of the great forge; one at b turns over and over the work on the anvil; one at c is holding a mise for welding; two others at d and e, are striking the iron; and another at f, is cutting files. Nearby at g is a forge; h, an anvil, at i a tub, at kk some tools, and at la a crane to aid in carrying the workpieces from the forge to the anvil, and from the anvil to the forge. The rest of the shop is strewn with various pieces of work and tools related to this profession.

(Bottom of the Plate)

Fig. 1. Mass or block of iron suitable for making an anvil. A, the hole for the bar for handling it.
2. The same block of iron mounted for forging. A, the block or mass. B, the bar. C, the wooden roller.
3. Bar, A, the end that enters in the hole in the block. B, the point that enters in the roller.
4. Roller AA, and its hoops. BB, the holes for the handle.
5. Iron handle for the roller.
6. Mise of iron to enlarge the block. A, the mise. B, the bar to hold it.
7. Block to which is welded the iron mise. A, the block. B, the mise. C, the bar.
8. Bickern ready to weld to the block. A, the bickern. B, the bar.
9. Block of iron where the bickern is welded. A, the block. B, the bickern. C, part of the bar.
10. Block of iron with two bickerns welded to it. A, the block. BB, the bickern. C, the hole for the bar.
11. Base plate to be welded under the anvil. A, the base plate. B, the bar.
12. Block ready to weld to the base plate. A, the block [upside down]. BB, the bickerns. C, the hole for the bar.

13. Mise (facing) of steel to be welded on the surface of the anvil. A, the facing. B, the bar to hold it.
14. Anvil roughed out. A, the block. BB, the bickerns. C, the base plate.

For our edification, Mr. James L. Kirkland has added the following notes:

1Taillandier: workman specializing in making edge tools. Taillanderie, or the trade of the edge tool maker, offers a certain analogy to coutellerie, or cutlery-making, which was often considered as one of its branches. Of all the industries, taillanderie is certainly the most ancient because cutting and perforating instruments are the first which civilization needed. Principal products of the taillandier were hatchets, axes, pruning hooks, saws for wood, metal and stone, planes, chisels, gouges, mason's tools, picks, hoes, rakes, plows, traps for birds and animals, traps and dies, compasses and measuring devices, and, of course, anvils and vises. The small hardware was sold by the gross or by the dozen. (There remains in Paris today, Rue des Taillandiers, near Place de la Bastille. On this short street was probably a concentration of shops of this type.)

2Mise: this term has numerous meanings in French technology. In blacksmithing, the following definition applies: a piece of iron or steel welded to another piece for reinforcement. Examples are the steel face of anvils, the steel cutting edges of shears etc. The mise was usually fitted with an iron handle to maneuver it while welding; after welding, the handle was cut off. The term mise appears frequently in anchor-making.

3The above is exactly as the text appears in Diderot, except the note "upside down" in part 12, was added for clarity.

Also to be noted is that Diderot was assisted in writing the sections of the Encyclopedia on Serrurerie, Taillanderie and on the casting of cannons by Monsieur Favre, serrurier and founder.
The International Conference and Workshop:

Twelve blacksmiths from the U.S.A. and one from Canada were invited participants at the International Conference and Workshop in Hereford, England. The Anvil's Ring asked them to share their impressions and relate what significance they feel the event held for blacksmithing in North America. Although the reports were written individually, they are related for you in dialogue form to draw attention to connecting thoughts as well as concurring and differing opinions, and, of course, to spare you needless duplication.

The North American participants were: Jack Andrews, Paoli, Pennsylvania; Mack Beal, Jackson, New Hampshire; Ivan Bailey, Savannah, Georgia; E.A. Chase, Santa Cruz, California; Dimitri Gerakaris, Canaan, New Hampshire; Bruce LePage, Belleville, Wisconsin; Eric Moebius, Plain, Wisconsin; Robert Owings, Point Reyes Station, California; Albert Paley, Rochester, New York; Steve Rosenberg, Stamford, Connecticut; Michael Spencer, Nova Scotia; Dorothy Stieger, Rochester, Washington; and Jim Wallace, Memphis, Tennessee.

Jim Wallace

The European tradition of architectural ironwork and public sculpture has produced a ready market for major work. Usage of the material never experienced the virtual disappearance that it did in this country from 1930 to 1970. Even prior to that, a goodly percentage of work here was executed either in Europe or by European trained smiths. The American tradition in iron was never deeply rooted, and the change in architecture and natural attrition of blacksmiths after 1930 produced a decline in usage that the Europeans never experienced. In the United States, that has resulted in very low public awareness of what architectural ironworks are or can be.

Dimitri Gerakaris

It came to light during casual conversations, that European smiths were shocked to hear our conception of their "uninterrupted blacksmithing tradition." They laughed as they indicated the converse situation, of the European smith fighting for his very existence in the 1920's and 30's against the repercussions of the industrial revolution (such as cheap cast ornaments, shoddily constructed arc and gas-welded imitations of forgeries, lack of stylistic innovation, etc.) while at the same time Samuel Yellin was flourishing in Philadelphia with crews at times exceeding 300 workers. They had never heard of Yellin before, and they were amazed by both the innovation of his design and his adaptation of American business practices. (The largest shops in Europe today still have no more than 20 employees, and those are rare. The average size is 3-6.) They furthermore pointed out that decorative ironwork hardly existed at all during the long wartime years of the 30's and 40's, and that it was not until the reconstruction of Europe that opportunities for architectural ironwork again occurred — but they had to fight for recognition then and they had to struggle to conceive of fresh designs that would compliment the new architecture and serve genuine needs rather than the decorative afterthoughts which no one could afford. And herein lies a message for all who bemoan the "unbroken tradition" that has paved the way for our European counterparts that we do not enjoy: we'd do better to roll up our sleeves and hammer out our own tradition and recognition.

Jack Andrews

Yes, there was a strong sense of tradition in some cases, but with an urge to break through this into other things. This was a strong feeling that I got even from the older smiths.

E.A. Chase

There was, of course, much continuity evident from cultural traditions, but what seemed most exciting was not the replication of traditional form, important as that is, but rather the growth beyond. The diffusion and exchange of ideas and attitudes will breed an international tradition of eclecticism. In a sense, eclecticism is chaos, but there is immense creative choice in that chaos, and in this way I feel we are entering an age of art in forged metal that will be shaped by even greater individual choice of expression.

Steve Rosenberg

Many blacksmiths feel victimized by circumstances. The Chinese symbol for distress is the same as that for opportunity. Opportunities do exist and blacksmiths are developing a design vocabulary that is well suited to the world's changing aesthetic climate.

I think now more than ever before the individuality of the smith is revealed in his work. We are enjoying a degree of creative freedom and continue the time-honored tradition of exploring the infinite possibilities in one bar of iron.
The American Reaction

E.A. Chase

At the conference there was a lot of discussion about tradition and the smith's relation and obligation to that tradition. There were Europeans who spoke of the burden of tradition and Americans who lamented its absence. I became aware, after seeing so many examples of the art, that the metal and the hammer that shape it maintain its own tradition in the language of its nature and processes. As we exchange our experience and understandings of forged metal, our total vocabulary will grow accordingly.

Robert Owings

The work of the central European smiths is far more in step with modern technology and contemporary design. This is expressed in both the scale and scope of their work. They all seem well schooled in the tradition of ironwork, yet have a more modern attitude toward iron as a medium. While working in this contemporary style they maintain the precedent of good design that can be found in all the well-designed traditional work of the past.

Bruce LePage

The East German, Achim Kühn, and Alfred Habermann from Czechoslovakia, produced some of the strongest and most sculptural work shown. A surprise was the work of the British smiths, which we had been led to believe was mostly traditional. A display of fireplace grates as well as British work in the Lindau, Germany exhibition dispelled this myth (another myth proven wrong was that these British are civilized; an impromptu dance the last day of the convention was initiated by Tony Robinson playing percussion on an overturned beer barrel and turned into an all-out frenzied blacksmithe's ritual). The Italians' ruthless use of the torch produced some nice fan-like forms. They were plates pre-cut with a torch and heated to open up the cut sections. The Germans were doing forgings using only the trip hammer, with few hand tools being used. They also forged pipe and forms of iron other than bar stock. They were good on their Reiters as one smith forged out a figure almost entirely on the power hammer. These machine forgings had a soft, clay-like look about them.

Here was a mastersmith with an open mind setting out to learn a new way to do ironwork. It's an example we all should follow! The conference as a whole brought out the common bond we all share — the knowledge that we can look at and solve the same problems in a thousand individual ways.

Mack Beal

It appeared to me that most of the large architectural works being done in the U.K. and Europe were by shops of 6 to 20 smiths and/or fabricators with the lead smith/owner doing design, marketing, administration, customer relations; albeit that they (lead smith) knew how to forge and also did get into the actual fabrication from time to time, as did Yellin.

I felt the best general design and execution was West Germany! This came through particularly in the demo work by Paul Zimmerman, helped by Tony Woottin, an English man working with Paul in Pliezhausen. They made a large window grille which was precise, of fine design flow, clean and faultless execution with both power and hand hammer. I was also impressed by Alfred Habermann of Czechoslovakia with his tremendous versatility and depth of design and execution skills.

(continued on next page)
E.A. Chase

The actual demonstrations were a feast for me, but not merely for techniques. The body language of a smith and how he works his metal is a fascinating glimpse into an individual’s nature. Alfred Haberman’s “dance” while hammering reflects truly the man’s exuberance. German Bergmeister, Manfred Brederoth and Herman Gradinger . . . all steeped in classic German blacksmithing technique, tell their own story as they work. Legendary Teutonic efficiency sublimely directed by individual and sensitive visions.

I noted that most of the work presented by individuals ranged widely in stylistic solutions as well as selection of metals; in both cases, sensitively chosen for function and setting, here was an affirmation that artists dealing with a public artwork can meet the needs of a wide range of settings and maintain their private leit-motif — for the work often bore the individual personality without the self-conscious stylistic repetition currently synonymous with “identity” in gallery shows. Particularly impressive to me in this regard was the work of Fritz and Achim Kühn, Alfred Schmidt and Toni and Simon Beneton. These masters displayed a healthy ability to sublimate their egos to the setting (especially in the architectural scale) for the sake of the overall aesthetic harmony. There was no need to scream for attention, the work was usually self-assured and confident. Toni and Simon Beneton, for example, a father/son continuum, often pigeon-holed as the foremost practitioners of the “mash and bash” school, displayed a great variety of approaches suited to specific projects.

The Germans, East and West, and the Italians, are obviously working to great artistic advantage in cultures that are sympathetic to their work. Certainly, I’m sure even in those countries, talent fidgets impatiently in the wings, but there appeared to be many more large commissions being executed than in most of Europe. Great artists, like Nero, are made in the drama of a society’s history, not in the vacuum of neglect. The full maturation of an artist depends on his or her capacity to produce work.

During the slide shows of German and Italian metalwork, the procession of major art parading before the eyes of smiths from cultures less sympathetic to their medium created some restiveness. From many of the blacksmiths of England, France, America, and other countries joining the Renaissance in metalwork, I sensed that their ambitions are scaled to similar proportions.

Jim Wallace

While certainly not all, the vast majority of those smiths who attended the event did have either formal training in blacksmithing or had served an extended apprenticeship. American smiths, on the other hand, have literally picked up the trade by reading a book or attending a short course in the subject such as six weeks at Turley Forge. While the disadvantage in this lack of training is self evident, there is one major plus — since we lack the knowledge of the “proper” way of doing things, Americans will try almost anything. The result being more spontaneity and freedom, and a lot of things done the hard way.

In terms of technology, the introduction of the air hammer has resulted in the “clay iron” and monumental scale that a number of those smiths attending were involved in. The extreme power of the tools are being taken advantage of and producing a really mushy quality so evident in the current work.

Dependence on the air hammer has had its victims. Current continental European work tends to place the majority of the emphasis on the material and secondary regard to the negative space. Sometimes it is ignored totally. While not all of the work was that way, I saw a tendency toward it. I still want an air hammer, but I don’t think I need it.

Robert Owings

The Europeans were enthusiastic about the energy and spirit they saw in the American work.

Mack Beal

It was gratifying to keep hearing appreciation of our American good humor, easy going unpretentious and good natured ways and approach to things.

Dimitri Gerakaris

The Europeans also were interested to see the progression in American smithing from the original preoccupation with line forms now maturing to an emerging awareness that bars cannot only be bent, but forged to utilize the plasticity of the material by the changing of cross-sections and the awareness of three-dimensionality. It was felt that American smithing can now address the progression beyond producing work which serves as a decorative afterthought and begin to serve as a bold, integral part of the architecture which it can serve.

E.A. Chase

The role of the American contingent at the conference was, to my eyes, a counterpoint. It is a role that is typical of America’s relationship to Europe in many ways; after all, we are as a society, the cultural offspring of Europe. Everyone expects surprises from their offspring. Right? I hope we lived up to expectations.

Al Paley, the only American on the program as lecturer on his own art, delivered a thorough and academic presentation of his work on both slide and film. Samuel Yellin was in the respectful hands of Jack Andrews, who delighted the audience with a passionate, in-depth look into the life and work of this fine smith. After an informal talk about ABANA by Dimitri Gerakaris, Jim Wallace presented a small cross-section of New American Smithing with a touch of his own “irony,” a fine slide of barbed wire, touted as America’s contribution to ironwork. This bit of humor was a thin skin for the self-consciousness about being in blacksmithing puberty that pervaded the American group. The European scope of accomplishment, technical traditions and sense of historical continuity are

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certainly awesome compared to ours. But what the Americans brought to the conference, perhaps of greater importance than our limited résumés, was our willingness to question anything. Americans have an aura of impetuosity in the face of cultural propriety that tends to stagger our European friends; it's often seen as a tenuous balance between iconoclasm and ignorance... the nature of youth. One comment by a European when asked his opinion of the American ironwork he had seen was that we exhibited "a great sense of humor." Our good fortune is to be able to use that rootstock of our mixed cultural background while being relieved of specific traditional responsibilities. Our good sense tells us that we all must pay tribute to the past to understand the present.

Eric Moebius and Bruce LePage forged a small garden gate as their contribution to the conference — an uncluttered piece that would, as described by Eric, allow passage to small dogs. (This parameter was in response to a comment by a more formally inclined European that garden gates must keep out dogs.)

Notably the only toolmaking demonstrated at the conference was a Damascus steel knife blade by Jim Wallace. This point struck me as particularly meaningful since much conference time in the United States is devoted to the making of tools. I suspect that the "survival" smiting that grew out of the counter-culture years of the late sixties motivated many of us and assigned a high relative importance to tool making. In fact, I feel that we have yet to work out a comfortable relationship between practical and ornamental work in our U.S. smiting organizations. We must clarify the common identity between the person who makes the hammer and the hammer that makes the personification.

Perhaps the most powerful feelings I brought back from England are an enhanced sense of pride in my craft and a profound humility towards its endless manifestations. There were about one-hundred and fifty smiths from all over the world in attendance who provided an abundant reason for these attitudes. Many of the smiths I met on this visit were shaped by the iron that they in turn seek to shape: bodies both bent and strengthened, minds disciplined and hot-chisel sharp. Eloquent people in what there is to say with hand and word.

Jack Andrews
The organization and planning of the conference was very well done. Caroline Pierce-Higgins and the staff at the Crafts Council did a wonderful job of a complex task. It was dignified and well thought out and as a result, produced a meeting of mind and spirit which will be long remembered.

There was a sense of community among the smiths that was a combination of work, play, wit, sensitivity, humor and love all forged together in the first International Iron Conference.

Dorothy Stiegler
We have all been quite removed from European smiting up to this event. Hopefully now that international contact has been made, we can all stay in touch. It was very humbling to be in the presence of so many really good masters, all sharing their ideas, skills, portfolios and themselves. Interpreters were everywhere in the lecture halls, but when it came to striking steel, no interpretation was needed. It was really awesome to watch British, Czechoslovakian, French and English all working jointly on a project, and each sensing the other's move at the precise time. I came away inspired and fired for years to come.

Bruce LePage
A memorable first world gathering of blacksmiths... The craft is far from being dead.

Steve Rosenberg
The "Forging Iron" conference in Hereford, England confirmed many of my notions regarding blacksmithing. It answered some questions and raised even more.

Blacksmiths, regardless of nationality, take immense pride in the heritage of the craft, and delight in the accomplishments of present day smiths. While the tools and techniques remain virtually unchanged, attitudes toward style, environment and evolving taste differ radically.

All of the participants at this international conference were from highly industrialized societies. Their work reflects a twentieth-century consciousness. The objects created by artists and artisans have always reflected their times. Whether traditionalists, romantics, renegades or visionaries, none live in a vacuum. The revolution in technology has profoundly affected the way the blacksmith plies his skills.

Robert Owings
I am still digesting all the thoughts that were a product of that tremendous gathering, and thinking of all the good new friends that I met, as well as the occasions to meet with older friends from across the Pond. But I came home with a renewed spirit and confidence in my own commitment to my work and the value that ironwork has to us everyone, collectively as well as individually.

These are the initial reactions of the American participants. The Anvil's Ring now invites you, the blacksmiths of North America, to comment on these observations and to take your part in the dialogue of where we stand and what new directions and options stand before us as a result of our expanded view of what is going on in the world.

This project is supported by a grant from the National Endowment for the Arts in Washington, D.C., a Federal Agency.
Diderot

It was a fine idea to reprint Diderot’s plates in The Anvil’s Ring!

If you ever feel like another such issue, consider Mathurin Jouasse, *La Fidelle Ouverture de l’Art de Serrurier La Fleche*, 1627. There are about 23 pages of woodcuts and 25 of engravings, mostly, but not all, on locks and keys and some surgical devices. It is much less well known than the Diderot things . . . and you must see Jean J. Perret, *L’Art de Couteller* / Three huge volumes of plates were published as part of the *Descriptions des arts et métiers* by the Académie des Sciences . . . by the way, the Diderot plates were not published in 1751 — (Anchors — 1769, Serrurerie — 1771, Taillanderie — 1771) the first plate volume came out in 1762 and the last in the 80’s.

Cyril Stanley Smith
Cambridge, Massachusetts

We’re glad you enjoyed the plates and we appreciate the new leads. Turn over one stone, and countless new paths appear, eh, Dr. Smith?

For the record: although you are right to say the first book of Diderot’s plates did not appear until 1762, the first volume of text in the Encyclopaedia appeared in 1751 and it was to our reproducing from the originals, and not subsequent reprints, that we referred.

That date appears on the title page to which the big finger was to have pointed in the last issue — unfortunately, the printer did not get the final proofs to us in time at the conference in England, and “page 3” was set on what printers call “cover 3.”

Ed.

I like the Diderot plates. I have access to a copy in French here in Arkansas (believe it or not). I also have been working with a top-notch translator here, but we’ve concentrated on the Spanish material I’ve found on blacksmithing rather than the French . . . I chose to start with Herrero and Forja.

I’d like to spend less time at the typewriter and more at the forge, but if the need for the Diderot translation is great and no one steps forward we could certainly do it.

Woodson Gannaway
Ozark, Arkansas

Thanks again for your fine spirit and ever-willingness to help. But, if you read the next letter, you’ll see you’re already off the hook this time — of course, we’ll take you up on that Herrero and Forja when you’re done.

Ed.

I was pleased to see the illustrations from Diderot’s Encyclopaedia in the Sept. 1980 *The Anvil’s Ring*.

I own the “Folio Edition” (16 volumes) of Diderot’s Encyclopaedia and read it regularly. I believe that I could provide you with an accurate English translation of the material you have published plus many of the allied trades, e.g., nail-making, cutler, etc. I am engaged in historical research in French technology with emphasis on blacksmithing, iron and steel manufacturing, heat treatment, etc. . . . My father was a blacksmith (1898-1930) and I worked with him. I am restoring an early marine hardware shop (anchors, mast stays, etc.) that served Panama City from 1917-1960. Also, I have bought some of the equipment from a French shop I visited in 1978, and plan to set this shop up in Panama City as a display. Both of these will be “working displays” as well as my current shop where I perform a limited amount of work, mostly locks, hinges, chest hardware, etc.

The early French blacksmithing books, in my opinion, excel anything written today and I have experimented with many of their old procedures, identifying modern materials that work satisfactorily. And, of course, there are several excellent modern French books on tools and smithing; these lean heavily on the old books. I own many of the modern books also, e.g., *Le Vivre De L’Outil* which treats tools in general. If I can be of service, please contact me.

James L. Kirkland
Panama City, Florida

We take pleasure to inform our readers that a flurry of correspondence has since occurred between Mr. Kirkland and *The Anvil’s Ring*, and that the first installment of the Diderot translations appears in this very issue. We wish to take this opportunity to thank Mr. Kirkland for his most generous contribution of time, energy, knowledge and concern. *Ed.*

ABANA-CBA Conference

I waited a long time for the ABANA conference, and it was worth it. Everything worked like a clock and it was a pleasure to be part of it.

I noticed by speaking to a good many blacksmiths that most of them were people just starting, finding their way, trying and eager to learn the art of blacksmithing. They travelled many miles, spent money, just to have a chance to see some blacksmithing, to see how a blacksmith forges, welds and produces . . . but what did we take home? [Many of the demonstrators are] for Masters. When will we have a chance to use those techniques? I might be out of order, but someone had to say it.

Max Segal
Philadelphia, Pennsylvania

It is your editor’s private opinion that this conference was indeed for masters — AND for everyone who would like to become a master. There was years’ worth of food for thought, practical as well as esoteric, for everybody; but that’s just a private opinion — what do the readers think? *Ed.*

International Conference — Initial Feedback

I am enclosing photographs taken at the Conference at Hereford. Others are to follow.
The college is going to invest in your Anvil's Ring which we have all found interesting. Maybe you can use some of these photographs for your magazine.

I am hoping to be able to photograph all the blacksmiths in Wales and their work and will forward copies on to you.

Tom Rees
Bwlch, Brecon
South Wales

Thank you! We very much look forward to this exchange of information. Ed.

Now I have a busy period, but I am just writing to say "Hello" and to promise to send pictures and writing about blacksmithing in my country. Greetings for you and other blacksmiths.

Vaclav Jarog
Prague, Czechoslovakia

Hello! We had a very fruitful and joyful time at the Forging Iron Conference.

Ten years have passed since we (I and my staff) began to try blacksmithing for ourselves in Japan in a non-traditional manner. So it was a very happy experience for us to attend the conference in Hereford and to be able to meet a lot of nice Western blacksmiths. We also are able to know about new movement of North American blacksmiths.

We hope to keep friendship (Blacksmithship?) we have gotten in Hereford with nice blacksmiths. So we will join to the membership of ABANA.

We always pray that the communication and alternating current among blacksmiths all over the world will spread beyond the differences of races and culture and the establishments, etc. If we can do something for ABANA in Japan, we will be pleased to help.

We enclose photos of our works. We will feel very happy if you introduce our works in The Anvil's Ring... Give our best regards to your fellows. Thank you.

Hiroshi Minamizawa
Kyoto-Fu, Japan

Thank you for your beautiful sentiments — and for your beautiful photos, which we are pleased to present in the Japanese section of our international coverage beginning this issue.

As we mention in that section, Goro Hatanoaka and Taro Kurata of Tokyo have, inspired by ABANA's activities, joined with 15 other Japanese smiths to form JABA — the Japanese Artist-Blacksmiths Association. We do, indeed, also look forward to increased international cooperation among smiths. Ed.

When Is It Too Late to Start?

In back issues of Anvil's Ring in the "Letters" section, I've read different letters saying that learning the blacksmith trade is a very young man's profession, but this mostly pertained to apprenticeships. I'm forty, and in months to come I'm going to Frank Turley's school in Santa Fe to learn forge welding and what I'm mainly interested in - forging ornamental iron, scrollwork and other fundamentals.

In my opinion, you can't set an age limit on learning to do what you are interested in. I would like to have your opinion on age as far as what I want to do — ornamental production. Can this be done at Turley's Forge in conjunction with a lot of practice, and your magazine with all the projects and ideas it brings forward?

Sincerely,
Melvin Berg

At the International Conference in England last Summer, it was mentioned by those who instruct the blacksmiths of France, that they feel it is too late to start after the mid-teens. But it also came out that the educational systems of Europe tend to lock a person into their direction — be it trade school, business school, academia, etc., at an even earlier age and that once this determination has been made, those who are not to work with their hands do not. Obviously, if you have not done more with your hands than tie your shoes and open doors, it would be very difficult to start blacksmithing at that point.

But if you are a shaper of things, if you don't take "no" for an answer (blacksmiths must be stubborn to hammer a material that is not much softer than a 2 x 4), if you have the resolve to go at it until it comes out right, and you have enough coordination to walk down the street and chew bubble gum at the same time, you have what it takes to become a blacksmith. And what you have inside of you and how hard you work at it will determine how good a blacksmith you will be.

I personally, Mel, am looking forward to seeing pictures of your work in future issues of this magazine. Ed.

Coal and Steel Tool Offer

I am a new ABANA member (joined at Santa Cruz) and have offers which I think will be of benefit to any ABANA member who uses coal or makes his own tools: I will deliver loads of Stanley Spencer Coal (used at Turley's Forge) of 9 button and less than 1% sulphur to blacksmiths' conferences in 10 ton minimum loads, sacked, in exchange for conference fees, lodging and transportation costs. I just delivered 13 tons to the Seattle area at $11/CWT, and they asked for 13 more. Phone or write: 505-473-0600; Rt. 7, Box 16W, Santa Fe, N.M. 87501.

I also have a few thousand chisel blanks (3/4" x 8" octagonal) of S-2 steel used for air hammer bits that were a tooling overrun. S-2, according to Tool Steel Simplified by Palmer, is the toughest tool steel known (at Rockwell C-60 it has 323,000 lbs. of breaking strength). I got a super buy and wish to pass it on — blanks, weighing approx. 1 lb. each, for $1

(continued on next page)
each F.O.B. Santa Fe or Portland, Oregon (S-2 cost $4 per lb.). Please enter any or all of the above that you might think of benefit to blacksmiths.

Russ Swider
Santa Fe, New Mexico

It’s that type of cooperation that ABANA is all about — thank you Russ! Speaking of coal and cooperating, ABANA President, Jim Wallace, has an excellent idea to facilitate the finding of good coal: he suggests that all who have a good source send all the pertinent information to The Anvil’s Ring and that we publish it to help others who have not yet connected. (and, of course, the more coal your dealer sells, the better chance he and you have of getting a steady supply at a good price). Let’s do it! Be sure to include the following: supplier’s name, address, and phone number; price (preferably per CWT and per ton), any particulars you may have such as sulphur content, B.T.U.’s, coke button, ash, point of fusion and lump size. Also be sure to include your name, address, phone number and general comments about this coal. Ed.

ABANA Too Complicated?

Shortly after our California conference I spent a very nice afternoon with Alex Weggers at his Carmel Valley place not far from Santa Cruz. He believes in living very simply with a minimum of overhead and expense. His house, blacksmith’s shop and sculpture studio are built from slab wood and other discarded materials, though they are designed in a most artistic and practical manner.

This uncomplicated, low overhead style has given him a lot of time and freedom which he has put to very good use developing his skills in wood engraving, sculpture, blacksmithing and toolmaking and, lately, writing as well.

We discussed briefly why he dropped out of ABANA. It was at the time the dues went from $15 to $25, and by-laws, legal status and other trappings of a large, high overhead organization were being considered and adopted. He simply thought the craft and the kind and number of people attracted to it couldn’t support this kind of overhead and expense. Artists do their thing from inner motivations and cannot expect recognition or financial reward for their work. The number who ultimately get this is just too small.

Negative opinions often deeply affect people and organizations and are usually difficult to detect and evaluate simply because most of us instinctively want to get along with and not be offensive to others. I pass this along at risk to myself.

Wallace Yater
Boonsboro, Maryland

Complications daily threaten from the moment we wake up — it all depends on our ability to deal with them.

Our by-laws qualified us as a non-profit organization, which in turn qualified us for grants, which in turn made the international focus beginning this issue possible. The dues were raised several years ago (and never since) that this magazine could be upgraded; since then, the base of the information being provided and shared has gone from 400 to 1,300 people. Sure, that’s more complicated, but who says we can’t recognize beneficial complications? If things get beyond the point where we forget our common love of blacksmithing and our desire to share this, and we can’t get it back on the track again, then it’s time to pack it up — but why stop something that’s helping a lot of people for fear of what might happen? Thanks for your candidness. Ed.

P.S.

I think a number of the ABANA-CBA exhibition catalogs, “Metal Smithing 1980,” were left over. A picture of Russell Jaqua’s “Kelp Bed” appears on the cover. If you have a supply, I would like to be able to get a couple.

Wallace Yater
Boonsboro, Maryland

Copies can be obtained by sending a stamped, self-addressed envelope with 28c for each copy to the man who further complicated his life to make the fine exhibition a reality: George Martin, 1660 9th Street, Santa Monica, California 90404. Ed.

Books

While selling books at the superb ABANA-CBA Conference in Santa Cruz, quite a few people asked me about books other than those I had with me. I believe, for the most part, the books listed in the advertisement in this issue of the AR covers the books published in the U.S. However, there are books printed elsewhere that people interested in blacksmithing would like to acquire. If anyone knows of worthwhile books on the subject that are not listed, I'd appreciate knowing about them. As a result of the inquiries I had at the conference, I have located and will handle the following books from Germany:

- Geschmiedetes Eisen (Wrought Iron) — Fritz Kuhn — $21;
- Stahl-Und Metallarbeiten (Steel and Metalwork) — Fritz Kuhn — $22.75;
- Schmiedeeisen fur Haus und Garten (Wrought Ironwork for House and Garden) — Batacchi — $27.50;
- Der Kunstschmied Otto Schmirl — Otto Schmirler (The Artist-Blacksmith Otto Schmirl) — Schmirlar — $39.50

These books are printed in German, but the text portion is small and all are basically “idea” or picture books and are therefore no less valuable to those involved in blacksmithing. Thank you.

Norm Larson
5426 Hwy. 246
Lompoc, California 93436

Wheelwright Info Sought

I am engaged in researching the history of the tools and activities of the wheelwright. My primary interest is in those artisans who flourished in the north-eastern part of the United States and Canada during the eighteenth and nineteenth centuries. The purpose of this study is to aid in the documentation and interpretation of wheelwright activities during museum restoration.

Comparatively little research has been described regarding this early industry, hence the information sought in the study is as follows: 1. The name and location of (a) docu-
mented wheelwrights (b) inventors; 2. Illustrations of tools produced, sold, invented or used; 3. Dates of manufacture, sales, invention or use of tools; 4. The developmental history of tools and activities of the wheelwright and changes occurring in tools' construction and use through time.

Part of the study involves a survey of the collections of selected Canadian and American museums to establish the scope of wheelwright activities in these particular areas and any additional archival material that would relate to the areas of study described above.

I am writing in the hope that the Artist-Blacksmith Association of North America may, through its conscientious readership, have information on this subject. I would very much appreciate knowing of such documentation and will readily defray the necessary expenses should any information avail itself.

Any particulars from trade catalogues, technical books or other archival sources that pertain to the study would also be of value. (My address is: 47 Woodmont Crescent, Ottawa, Ontario, Canada K2E 5P9)

Carlo T. Toccalino
Ottawa, Ontario

Ironwork Wanted

We are interested in those artist blacksmiths who will make distinctive pot racks, kitchen accessories, hooks, etcetera. Contact:

C. Portorslis, Pres.
Kitchen Glamour
26770 Grand River
Detroit, Michigan 48240
313-537-1300.

We are an established Lighting Fixture firm in New York City dealing exclusively in antique and classical reproduction wall fixtures and chandeliers of the highest quality. Our showroom is located in Manhattan but we also have representatives in California, Texas, Chicago, and Florida.

After forty years of dealing with the finest of Italian craftsmen in order to reproduce our line of approximately one hundred very elaborate iron chandeliers and wall fixtures, we have decided that our preference would be to find skilled labor within the United States.

We are interested only in a small shop which can maintain the excellence of craftsmanship that we have demanded over the past forty years, who can promise us continuity in deliveries, and above all, who will not use or copy our exclusive designs for any purposes other than our own.

Please address all replies to:

Nancy N. Cappellano
353 East 83rd Street
New York City 10028

Classifieds?

My main purpose in writing this letter was to find out what it costs a member to place a classified ad in The Anvil's Ring?

Dan F. Maxwell
Lithia Springs, Georgia

Your membership in ABANA qualifies you to run classified ads at absolutely no extra charge. Ed.
**For Sale:** Blacksmith coal $108 a ton delivered within 20 miles; $98 a ton picked up at Essex Junction, Vermont. Matthews Coal Company, Allen Point, South Hero, Vt. 05486 (802) 864-6049.

**For Sale:** 25 lb. Little Giant Trip Hammer with 1 hp single phase motor and new clutch bearing — $800; Johnson 2 burner gas forge in good shape — $350; Heavy duty drill press, blacksmith type — $300. Maurice V. LePage, Box 67, Waverly, Minnesota 55390 (612) 658-4121.

**For Sale:** 25 lb. Little Giant trip hammer with 220 volt, single phase motor, in good shape — $750. Village Blacksmith, P.O. Box 216, Dolores, Colorado (303) 882-4479.

**For Sale:** Wrought iron rod, ¼" round, 20 ft. lengths; 50¢ a pound plus shipping cost. Write to: John F. Schmidt, RR 1 Box 99, Three Oaks, Michigan 49128.

**For Sale:** 25 lb. Little Giant and 50 lb. Murray, both with motors and extra sets of dies. Will ship. Contact: Nick Brumder, Liberty Forge, P.O. Box 1152, Crested Butte, Colorado 81224 (303) 349-6253.

**Wanted:** Lambskin parchment (not cotton) or suitable material for sewing into iron forms as a lampshade. Also sources for glass blown into cylinders of expanded metal, for lampshades. Any information about sources for these items would be very much appreciated. Contact: Nick Brumder, Liberty Forge, P.O. Box 1152, Crested Butte, Colorado 81224 (303) 349-6253.

**Blacksmithing School:** Beau Hickory’s school of smithing, The Sastra Institute, began its fall session on October 1st. Classes will be continuous through the following Spring. If you seek knowledge in metal work, and feel I might help you, contact me, Beau Hickory, P.O. Box 34235, San Francisco, California, 94134 or phone (415) 468-1818.

**Shop Available:** We have a shop available in our craft village for a qualified blacksmith. For information contact: Shelley M. Hunt, Hunt Country Furniture Inc., Wingdale, New York 12594 (914) 832-6601.

**New Book:** The Pioneer Abode — even you can build a log cabin, by ABANA member, Dan Moxwell. Completely illustrated, $7.95 plus $1.00 shipping. P.O. Box 672, Lithia Springs, Georgia 30057.

**Blacksmith Wanted:** with some experience to join shop that does primarily architectural work. Contact: Robert Lepper, Mountain Ironworks & Gallery, 741 S. Main St., P.O. Box 460, Minturn, Colorado 81645 (303) 827-4226.

**Apprentice Wanted:** Contact Robert Owings, The Creamery Ironworks, Box 353, Point Reyes Station, California 94956 (415) 663-1651.

**Lindau Catalog Available:** A 225 page catalog of the International Exhibition of Modern Wrought Ironwork and Sculptures at Lindau, Germany can be obtained by sending an international money order for the amount of 19.5 Deutsch Marks to: Fachverband Metall Bayern, Erhardstrasse 6, 8000 Munich 5, West Germany. (At press time, that equals about $11 U.S.; be sure to send your request air mail and be patient.)

**ABANA membership includes the right to submit classified ads at no extra charge. Non-members must pay $5 for the first 25 words, and 20¢ per word thereafter, except that there is never any charge for "blacksmith wanted" situations.**
President's Message

We suspected it. Then we knew it. And now, after visiting with over 400 people from all over the United States and seven foreign countries, it is proven: ABANA can no longer function as it has in the past. We have grown from the 27 smiths who got together in Lumpkin in 1973 and decided that it would be a good idea to keep in touch so that information could be exchanged to an international organization of over 1300. The Anvil's Ring has evolved from humble beginnings (very much like all the newsletters of various blacksmithing organizations) to its present state. Conferences changed from something akin to any one of the regional workshops to the full blown get-it-on Santa Cruz event.

There is, however, one thing which has not changed. ABANA is still committed to blacksmithing and all of us folk who like it. The question now is, how do we best pursue this commitment. After the Santa Cruz Conference, the Board of Directors met and decided on the following program:

1. to actively encourage the growth of regional groups and chapters of ABANA. This is needed because ABANA can no longer provide the small conference on an annual basis which so many of us felt to be so valuable. It is much easier to get together when the members are local rather than scattered all over the world.

2. to continue to produce the Anvils Ring in its same high standard.

3. to develop and encourage the use of the ABANA slide and film Library. This is being done now under the guidance of Jack Brubaker and Susan Showalter (Goat Hill Forge, RR 2, Box 12113, Nashville, Ind. 47448), and should be ready for use by ABANA chapters by mid winter.

4. to produce a newsletter which will appear between issues of the Anvils Ring. This is being done by Joe Humble (5029 Montcrest Dr., Chattanooga, TN, 37416), and will be sent to chapters free, and is available by subscription to individuals. It will be a compilation of all the various newsletters and will get out timely information. And if need be, special mailings can be undertaken.

5. to continue with the “Switchboard.” This is a service to increase the communications among members, associations and chapters. It is a referral service which deals with the business of the organization, and is operated by David Court (Bay Hill Road, Northfield, NH 03276).

All of these things are being done for the sole purpose of helping us all enjoy the art of blacksmithing more.

As it has been said before, ABANA is NOT a service organization — it is a self-service organization. And if you, the membership, keep pitching in, you will continue to receive.

Sincerely,
Jim Wallace
Memphis, Tennessee

Editor's Report

We have been most encouraged by the involvement of the members and the backing of the Directors. The Editor and Associate Editor still provide their services gratis as do all contributors. As long as a large interested group continues to pitch in, this thing will work — energy creates energy.

We are grateful for the travel grant to Hereford and Lindau provided by the National Endowment for the Arts; we have returned armed to the teeth with information and photos to share.

The switch to a smoother paper has been made to improve the quality of our photographic reproduction. This is a top quality paper of excellent shell-life.

We look forward to your continued enthusiasm and input and reaffirm our commitment to provide a pipe-line of communication to all those who wish to share their knowledge and love of smithing.

Best wishes,
Dimitri Gerakaris
North Canaan, New Hampshire

Secretary-Treasurer's Report

At this time we have a total of 1,333 members. Our expenses for the past year were:

<table>
<thead>
<tr>
<th>Expense</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postage</td>
<td>956.84</td>
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<tr>
<td>Office Supplies</td>
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<td>Secretarial Expense</td>
<td>1,630.62</td>
</tr>
<tr>
<td>Telephone</td>
<td>1,613.34</td>
</tr>
<tr>
<td>Legal &amp; Accounting Fees</td>
<td>468.85</td>
</tr>
<tr>
<td>Anvil's Ring</td>
<td>21,574.18</td>
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<tr>
<td>Conventions &amp; Conferences</td>
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<tr>
<td>Insurance</td>
<td>350.00</td>
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<tr>
<td>Miscellaneous</td>
<td>20.97</td>
</tr>
<tr>
<td>Depreciation</td>
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</tr>
<tr>
<td><strong>Total Expenses</strong></td>
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</tr>
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</table>

Our income was:

<table>
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<th>Income Description</th>
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</tr>
<tr>
<td>Anvil's Ring Back Issues Sales</td>
<td>1,508.19</td>
</tr>
<tr>
<td>Grant</td>
<td>3,000.00</td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td><strong>33,519.91</strong></td>
</tr>
</tbody>
</table>

With the anticipated return of seed money we put into the Santa Cruz Conference, we should find ourselves around the break even point.

Respectfully submitted,
Carl VanArnau
Gainesville, Florida

Membership Directories Available

Membership directories of all ABANA members, listed alphabetically by state, will be made available to any ABANA member and can be obtained by sending $4.50 to ABANA Directory, Kevin Matthews' Progressive Forge, 329 Chestnut St., Santa Cruz, California 95060. Kevin Matthews is providing this service of providing up-to-date lists on a voluntary basis and we owe him a great deal of gratitude. All new members will now automatically receive a listing of other ABANA members in their state. Any existing ABANA member may receive such a list by request to ABANA, P.O. Box 1191, Gainesville, Florida 32602.

List of Demonstrators

All who wish to receive, or wish to be on, a listing of all known blacksmithing demonstrators may write to Dorothy Stiegler, 4642 180th Way S.W., Rochester, Washington 98579. We thank Dorothy for volunteering to do this and remind you this will be but a listing, not an endorsement of the demonstrators.

(continued on page 64)
It is impossible at this point to say exactly what the ramifications will be of all the international connections and events that have been set in motion. There are, however, already some definite plans underway as well as the emergence of new dreams. These include the following:

A New Iron Age: the art of the blacksmith today. An International Exhibition by The Victoria and Albert Museum, London. As mentioned with full details in the March 1980 Anvil's Ring, this project is going full steam ahead — with one notable exception: the deadline for application has been extended to the end of February to encourage participation from this side of the Atlantic.

Begun as a result of the Great Exhibition of 1851, the Victoria and Albert Museum (formerly the South Kensington Museum) houses one of the world's top ironwork collections; its major objective is to promote good design. Although the V & A is known for its collection of historical examples, it has in recent years become involved in the exhibition of contemporary design. Blacksmiths should be pleased to know that this upcoming exhibition is the first to be devoted solely to one medium.

To occur March thru June 1982 in a special area on the ground floor of the Museum, the exhibition is to demonstrate the artistic potential of forged ironwork and to show the quality and variety of work being produced from original designs using all the modern tools and techniques available. It is hoped that it will include as comprehensive a range of objects as possible, from iron staircases and grilles to jewellery, though the number of large works included will have to be limited. The main display will be supplemented by large-scale photographs, models, samples and designs. The emphasis will be on original ideas, however simple, and the quality of their execution. It is possible that ideas from different craftsmen may be combined in a single piece or group.

The V & A will be inviting well-known artist craftsmen from abroad to contribute and will be very pleased to hear from any smith in this country who has ideas for work along the lines indicated above. Work, or ideas for work, for inclusion in the exhibition will be selected by a special committee of assessors which will meet in Spring of 1981.

The V & A and the Crafts Council of England and Wales (which is also involved in planning the exhibition) may buy or commission pieces for subsequent exhibition or loan in their respective collections, and they will also be encouraging other organizations and individuals to do likewise. Foreign participants are to pay for their own shipping; however, the objects will be insured during the exhibition.

Submissions for application should be limited to four items; they may be made by slides OR photos OR drawings for proposed work, should include dimensions, and must be received before the end of February by: Marian Campbell, Department of Metalwork, Victoria & Albert Museum, London SW7 2RL, England.

A New International Publication to coincide with the international exhibition of contemporary ironwork at the Victoria & Albert Museum: Camberwell School of Art & Craft will be publishing a book to be researched and written by Ivan Smith with support from the Crafts Council.

The book is intended to produce contemporary ironwork to Britain. It will probably include and go beyond the pieces shown in the exhibition. It will contain work and statements by leading practitioners as well as explanatory drawings and detailed descriptions of a range of work showing the possibilities of the metal.

The book is being widely publicized to make it as comprehensive as possible. Original black and white prints are required, and they should be at least 5" × 7½" and ideally 8" × 10". Each photo must be accompanied by full details i.e. description of piece including function, materials, dimensions, techniques and any other comments, and is to be sent to: Ivan Smith, Woodside, Sneads Green, Nr. Droitwich, Hereford & Worcester, England.

International Schools of Blacksmithing... Although none exist at the present, there are at least two groups who would like to institute international schools of blacksmithing. In Italy, Prof. Antonio Benetton and Simon Benetton would like to reconstitute the Accademia Internazionale del Ferro, which ran for a couple years after its 1967 founding to provide "international courses in theory and practice devoted to the plastic and 3-dimensional possibilities of working iron." In Germany, Alfred Schmidt would like to establish a permanent international training center for wrought iron and metal-shaping in which theoretical instruction and practical skills would be taught. He has already received interest for support from the Cultural Ministry of Kiel. The Anvil's Ring will certainly keep you informed of any developments, but if you wish in the interim to send letters of support to these individuals, you may reach them, respectively at: Accademia del Ferro Battuto, Marocco di Mogliano Veneto, Via Marignana 112, Treviso, Italy and Kunstschmiede-Trappenkamp, 2351 Trappenkamp, Hermannstädt - Str. 27, West Germany.
Coming Events

November 1980

21-January 5, 1981 . . . “Forge It I,” an invitational showing of 22 contemporary blacksmiths will be presented by the Blacksmith Shop, 455 Main Street, Ferndale, California 95536.

December

15-19 . . . Bruce Daniels will teach advanced forging techniques. For fees and full information write or call: Carol G. Sakowski, The Unicorn Forge, Rt. 1 Box 50, Barneveld, Wisconsin 53507 (608) 796-4341.

19-February 8 . . . An exhibition of the F. Weigl Iron Works, in existence since 1922, will take place at the Laguna Gloria Art Museum, 3809 W. 35th St., Austin, Texas.

January 1981

7 . . . Deadline for application to The Cutting Edge, an exhibition to consider that theme in the broadest sense: e.g., a fan cuts through the air, etc. This exhibit of mostly metalwork by the Kentucky Arts Commission will be catalogued and will tour the Southeast for 2½ years. Applications need not show the actual pieces to be exhibited, but must merely indicate the quality of your work. Send up to 5 slides to: The Kentucky Arts Comm., 302 Wilkinson St., Frankfort, Kentucky 40601. For questions, call Albert Sperath at (502) 564-3757.

18-23 . . . Japanese Metalsmithing techniques and Mokume Gane (“wood-grain Metals”) will be taught by Eugene and Hiroko Pijanowski at the League of N.H. Craftsmen Seminar ’81 at Enfield, N.H. For details contact Evelyn Zimmerman, League of N.H. Craftsmen, 205 N. Main St., Concord, New Hampshire 03301 (603) 224-3375.


February

28 . . . Deadline for application to Art of the Blacksmith Today, an international exhibition by the Metalwork Department of the Victoria and Albert Museum, London. For details, see the section near the end of this issue entitled “International Events of the Future.”

March


22-May 9 . . . “Windtoys, Weathervanes and Whirligigs,” a national juried exhibition of contemporary craft objects moved by wind at Kentuck Center, Northport, Alabama. Entries may be in any media. Juried by slides. Juror is Dr. Robert Bishop, Director of the American Museum of Folk Art, New York. $3,000 purchase and merit awards. $10 entry fee for maximum of three entries. 20% commission. Slide deadline is January 21. Details and entry forms from Kentuck Center, P.O. Box 127, Northport, Alabama 35476.

April

26-May 2 . . . David Brewin will teach basic blacksmithing at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

May

10-16 . . . Paul Lundquist will teach basic blacksmithing at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

17-23 . . . Daryl Meier will teach advanced blacksmithing at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

24-30 . . . Peter Ross will conduct a workshop on Early American Blacksmithing at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

(continued)
July

5-11 . . . Jud Nelson will supervise a workshop on advanced blacksmithing at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

14-25 . . . David Brewin will teach basic blacksmithing at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

26 August 8 . . . David Brewin will teach basic blacksmithing at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

August

8-22 . . . David Brewin will teach basic blacksmithing at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

September

6-19 . . . David Brewin teaches basic blacksmithing at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

November

1-14 . . . Francis Whitaker teaches advanced blacksmithing techniques at the John C. Campbell Folk School, Brasstown, N.C. 28902 (704) 837-2775. Contact: Laura Sprung.

Coming Events is a service to promote the good of blacksmithing—there is never any charge for the inclusion of information to this end. You must, however, notify us of your upcoming activities as the staff of this magazine is not telepathic. Deadlines for the submission of events are the beginnings of January, April, July and October for each issue that will appear two months thereafter.

ABANA update continued

Nominations for Upcoming Elections

You will receive ballots for the election of 5 of ABANA's 15 Directors with your next issue. In addition to the actions of an appointed nominating committee, the nomination of any individual by 10 members guarantees the placement of that individual on the ballot. And although the directors elect the officers of President, 1st and 2nd Vice President and Secretary-Treasurer, you have the right to suggest any members you wish to those positions. Send any suggestions to the man who has volunteered to handle this chore: Jonathan Nedbor, 764 Pinebrook Blvd., New Rochelle, N.Y. 10804 as soon as possible.

Dues

The Board of Directors, meeting at the conclusion of the Santa Cruz Conference, voted to retain the dues at the present level. We are counting on a continued increase of membership to help us counter inflationary costs.

NEA Grants

We cannot thank enough the National Endowment for the Arts, a federal agency, for three grants this past year which tremendously helped American Blacksmithing. 1. $3,000 was paid to bolster the program of the ABANA-CBA Conference at Santa Cruz (grant written by Tom Bredlow). 2. $3,000 was shared by the American representatives of the International Conference and Workshop in England who otherwise could not have afford to go (grant written by Tom Gipe) and, 3. The travel expenses were paid for the editors Gerakaris to cover the International Conference and Lindau Exhibition for the Anvil's Ring. This is the first year ABANA has applied for any grants, and we are most grateful for such measures of confidence and support.

Next Issue

— International photos of ironwork continued
— On the education of blacksmiths around the world
— Various approaches to business survival for the modern blacksmith
— More on toolsmithing
— More Diderot translation
— More of other things
— Most importantly, your ideas and reactions

To be included, material should be sent within ten days of receiving this issue to:
Dimitri Gerakaris
Editor
The Upper Gates Rd.
North Canaan, New Hampshire 03741
WHERE'S MY HAMMER?
HOW MANY TIMES HAVE YOU SAID THAT TO YOURSELF & YOU KNOW THEY DON'T WALK!

FORGE TOP POTATOES AREN'T STUFFING

WRAP SPUDS IN FOIL THROW IN BY THE FIRE FOR AN HOUR

MAKE SKEWERS FROM ½" ROD COOL IN VEGETABLE OIL